A QUASI EXPERIMENTAL STUDY TO EVALUATE THE EFFECTIVENESS OF DEEP BREATHING EXERCISE AMONG PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE WHO ARE AGED BETWEEN 50-60 YEARS IN SELECTED HOSPITALS AT DINDIGUL DISTRICT.

A DISSERTATION SUBMITTED TO

THE TAMILNADU DR.M.G.R MEDICAL UNIVERSITY,

CHENNAI

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS

FOR THE DEGREE OF MASTER OF SCIENCE IN NURSING

OCTOBER -2017

A QUASI EXPERIMENTAL STUDY TO EVALUATE THE EFFECTIVENESS OF DEEP BREATHING EXERCISE AMONG PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE WHO ARE AGED BETWEEN 50-60 YEARS IN SELECTED HOSPITALS AT DINDIGUL DISTRICT.

MISS. K.KARTHIKA

A DISSERTATION SUBMITTED TO

THE TAMILNADU DR. M.G.R MEDICAL UNIVERSITY,

CHENNAI,

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS

FOR THE DEGREE OF MASTER OF SCIENCE IN NURSING

OCTOBER-2017

CERTIFIED BONAFIDE WORK DONE BY

MISS K.KARTHIKA

SAKTHI COLLEGE OF NURSING,

ODDANCHATRAM,

DINDIGUL.

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTSFOR THE DEGREE OF MASTER OF SCIENCE IN NURSING FROM THE TAMILNADU DR.MGR MEDICAL UNIVERSITY, CHENNAI.

INTERNAL EXAMINER **EXTERNAL EXAMINER**

1. _____ **2.** _____

CERTIFICATE BY RESEARCH GUIDE

This is a bonafide work of **MISS.K KARTHIKA M.Sc (N)** II Year Student from Sakthi college of Nursing, Dindigul, Tamilnadu, India, submitted in partial fulfillment for the Degree of Master of Science in Nursing under the Tamil Nadu Dr .M.G.R Medical University, Chennai.

Signature of the Principal _____

Prof. V.JANAHI DEVI M.Sc (N).,

College Seal _____

A QUASI EXPERIMENTAL STUDY TO EVALUATE THE EFFECTIVENESS OF DEEP BREATHING EXERCISE AMONG PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE WHO ARE AGED BETWEEN 50 -60YEARS IN SELECTED HOSPITALS AT DINDIGUL DISTRICT.

The Research Study Approved By Dissertation Committee On……

1. RESEARCH GUIDE : _____

Prof. V. Janahi Devi, M.Sc (N).,
Principal,
Sakthi College Of Nursing,
Oddanchatram,
Dindigul. (DT)

2. SUBJECT GUIDE : _____

Asso Prof .D. Thulasimani ,M.Sc (N),
Department of Medical Surgical Nursing,
Sakthi College Of Nursing,
Oddanchatram,

3. MEDICAL EXPERT : _____

Dr. Siva Kumar .M.D.,
General medicine
Government head quarters hospital,
Dindigul.

ENDORESEMENT BY HE SUBJECT GUIDE AND HOD

This is to certify the dissertation entitled **"A study to assess the effectiveness of deep breathing exercise among chronic obstructive pulmonary disease patients who are aged between 50-60 years in selected hospital at Dindigul district"** is a bonafide research work done by **K. Karthika** in partial fulfillment of the requirement for the degree of master of science in nursing (medical surgical nursing)

SEAL AND SIGNATURE OF THE RESEARCH GUIDE AND HOD

Mrs. D. THULASIMANI M, SC (N)

DEPARTMENT OF MEDICAL SURGICAL NURSING

SAKTHI COLLEGE OF NURSING

SAKTHI NAGAR, ODDANCHATRAM

DATE:

PLACE:

ACKNOWLEDGEMENT

"He makes all things beautiful in his time"

My great indebted thanks to the **Lord Almighty** for his abundant blessings, endless grace and love showered on me in providing the strength to overcome all the difficulties and made me to complete my study successfully, without which it would not have been possible. There are several hands behind in giving a shape to this research study, which would be impossible to mention all by name. There are some whom the investigator would particularly like to thank.

I am substantially thankful to our chairman **Dr.K.Vembanan M.B.B.S., M.S and** express my deep gratitude and heartful thanks to our vice-chairman **Dr.GokilaVembanan M.B.B.S, DGO** for their encouragement and dedication towards the academic excellence and for providing me an opportunity to finish my project successfully.

It is my bounden duty to express my heartiest gratitude to **Prof.V.JanahideviM.Sc (N),** Principal, Sakthi College of Nursing, for her constant enthusiastic support, warmth inspiration and gave innovative ideas to incorporate in this study.

Excellent teacher is a complex matrix of builder ,moulder, artist, leader and harvest .I would like to express my immense gratitude and whole hearted thanks to my clinical guide **Asso.Prof.D.Thulasimani M.Sc (N).,** Department of Medical – Surgical Nursing, Sakthi College of Nursing, for diligent effort the best quality, peaceful, her reassuring plan and a very approachable and inspiring quote, that can

never be forgotten .I consider it as a great honor and privilege to have completed under his supervision.

I profusely thank all medical and nursing experts who validated content and tool which helped to incorporate their views this study especially extend my gratitude and affectionate thanks to **Asso.Prof.Shobana M.Sc(N), Asso.Prof.Reena.M.Sc(N),** Head of the Department of Medical Surgical Nursing for her constant encouragement, supervision and timely help during the entire course of study.

I express my deep heartful thanks **to Asso.pro.T.Ganga Eswari.,M.Sc(N),** Head of the Department of Obstetrics and Gynecological Nursing**,** our class co-coordinators, Sakthi College of Nursing, for their valuable guidance, support and encouragement which enabled me to complete this study successfully.

I extend my whole hearted thanks to all **Faculty Members** of Sakthi College of Nursing for their continuous encouragement, guidance and valuable suggestions for this study.

I profusely thank all **Medical and Nursing Experts** who validated the content and tool, which helped to incorporate their views in this study.

I am thankful to **MS.Bhuvana Msc.,** computer technician and **Mrs.Poongodi M.Sc**, librarian of Sakthi College of Nursing for helping me with literature work and for extending library facilities throughout the study.

I wish to communicate my extraordinary credit to **Mr.Mani**, Biostatistician for his well-timed and opportune aid and backing in statistical analysis and presentation of data.

I extend my special thanks to **Dr. Sivakumar M.D** General, medicine headquarters government hospital Dindigul district, and **Dr.R.Kannan.**

M.B.B.S,M.S., oddanchatram government Hospital, Dindigul district who gave me permission to conduct the study and my special heartful thanks to **all the participants** for their co-operation throughout the study. Without their co-operation it would not have been possible to complete my study.

My grateful thanks to **Mrs.Radhi devi.A., M.A.M.A., M.Phil., PhD.,** HOD of Tamil and **Mrs.D.Maheswari M.A.,M.ED.,M.Phil.,**Asst.professor of English, Sakthi Arts and Science for editing this manuscript and tool in Tamil and English.

A special note of gratitude to my classmate **Mrs Annakamu, Mrs Vijaya, Mrs Sahaya Jovitha** and **my lovable friends and seniors** for their co-operation and help they rendered throughout the study.

Life has blessed me with an understanding, lovable and value oriented my beloved Mother and uncle who persuaded me to pursue Post Graduate study, I am ever grateful to his supportive presence all along.

This study drew upon the knowledge and help, experience and expertise of many persons of good will, though too numerous to name, each one of them is remembered for their individual contributions without which the realization and presentation of this research would not have been. So I shower my great deal of thanks to those who helped directly and indirectly in this study

ABSTRACT

A Quasi experimental study was conducted to evaluate the effectiveness of deep breathing exercise among chronic obstructive pulmonary disease patients at selected hospital in Dindigul District was done by miss. K. Karthika .T as a partial fulfillment of the requirement for the Degree of Master of Science in Nursing to the Tamilnadu Dr.MGR. Medical University Chennai during the year of 2015-2017.

The objective of the study were**,** to assess the breathing pattern before and after breathing exercise among chronic obstructive pulmonary disease patients in control and experimental group. To evaluate the effectiveness of deep breathing exercise among chronic obstructive pulmonary disease patients in experimental group. To find out the association between the breathing pattern with selected demographic variables in the control and experimental group

In this study quasi experimental, non randomized control group pre test-post test design was adopted. The study include 60 samples patients who were selected by purposive sampling technique .the study was conducted in government headquarter hospital at Dindigul district demographic data ,modified dyspnea Borg scale and intervention for deep breathing exercise these are method used for data collection procedure. the tool was finalized of five medical and nursing experts and pilot study for the its clarity ambiguity and feasibility on similar subject to analyze the experimental data statistical analysis was used Modified Borg scale was used to evaluate the dyspnea. Experimental group received intervention of deep breathing exercise for 25 minutes twice a day for without treatment

With regard to age, 9(30%) in experimental group and 10(33.3%) in control group belongs to the age group of 51 to 60 years and 9(30%) in experimental group and 9(30%) in control group belonged to the age group of above 60 years.

Considering the sex, 17 (56.6%) subjects in the experimental group and 14 (46.6%) in the control group were females and the remaining were males.

In relation to education, 9(30%) of them had high secondary school and 7(23.3%) of them had illiterate in experimental group and 7(23.3%) of them had high school education and 9(30%) of them had higher secondary education in control group.

With regard to the occupation, 9(30%) were self workers and 9(30%) were industrial workers in experimental group and 9(30%) were self workers and 8(26.7%) were industrial workers in the control group.

In relation to marital status 22(73.3%)were married and6(20%)unmarried in experimental group and 15(50%)were married and 6(20%) un married in control group

Regarding the history of previous copd, 18(60%) in experimental group and 24(80%) in control group had no history of previous copd.

Considering the duration of illness,10(33.3%) subjects having 6 years in and 10(33.3%) subject having 2-5years in experimental group and 12(40%)subject having 6 years and 9(30%)subject having in control..

With regard to the treatment of copd, 16(53.3%) subjects in the experimental group and 16(53.3%) of subjects in the control group.

Findings of the pre test level of breathing pattern in control group on 2 subjects (6.7%) had moderate level of breathing difficulty and 5 subjects(16.7%) had

severe level of breathing difficulty . And the post test level of breathing difficulty in control group , 2 subjects (6.7%) had somewhat severe level of breathing difficulty and10subjects (33.3%) had slight level of breath difficulty .

Whereas in experimental group, the pre test level of breathing pattern 11 subjects (36.7%) had maximum level of breathing difficulty and 2 subjects (6.7%) had moderate level of breathing difficulty and the post test level of breathing difficulty, 12 subjects (40%) had very very slight level of breath difficulty, and 10(33.3%) had slight breathing difficulty, level of breathing in the experimental group.

The calculated ‘t’ values in the control group were 2.07which are not significant. It is concluded that there was no significant differences between the pre and post test level of breathing pattern among chronic obstructive pulmonary disease patients

The calculated ’t’ value in the experimental group were 2.64was statistically significant at $p<0.05$ level which clearly shows that there was a significant reduce in the level of breathing pattern among patients among chronic obstructive pulmonary disease after giving breathing exercise .Hence H_1 is accepted.

The obtained ‘t’ values for level of pain between the control and experimental group is 4.51which were highly significant at $p<0.05$ level. These findings revealed that the subjects in experimental group had decreased level of breathing pattern after giving breathing exercise compared to control group. Hence research hypothesis H_2 is accepted.

TABLE OF CONTENT

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

CHAPTER-I

INTRODUCTION

CHAPTER – I

INTRODUCTION

If you know the art of breathing,

You have the strength, wisdom, and courage of ten tigers.

Chinesage

In the history of medicine there have always been periods when one diseases or group of related disease presented an unusually grave threat to the health of the individual and to the community. In the particular period in which we live, we concerned by the growing number of men disabled by chronic respiratory disease and by the disruption. Such illness are causing in the life of the individual.

"When you can't breathe, nothing else matters", is the mantra of the American Lung Association. Chronic obstructive pulmonary disease results from increased resistance to airflow because of airway obstruction or airway narrowing.

Chronic Obstructive Pulmonary Disease (COPD) is a progressive inflammatory disease characterized by chronic obstruction in the peripheral bronchus and pulmonary emphysema. The disease is disabling with symptoms such as chronic cough, phlegm, wheezing, shortness of breath and increased infections of the respiratory passage. Changes in the lungs result in mucus hyper secretion, dysfunction of the cilia, airflow limitation and hyper inflation of the lungs, gas exchange abnormalities, pulmonary hypertension and cor pulmonale.

Persons with COPD are greatly under estimated because the disease is usually not diagnosed until it is moderately advanced .Patients usually seek medical help when they have an acute respiratory infection, with dyspnea being the main concern. Dyspnea is often progressive, and initially occurs with exertion, gradually interferes with daily activities and in late stages dyspnea may be present at rest also. The person becomes more of a chest breather, relying on the intercostals and accessory muscles rather than effective abdominal breathing.

Breathing exercises may assist the patient during rest and activity by decreasing dyspnea, improving oxygenation, and slowing the respiratory rate.

Minas M, Hatzoglou C 2010 A retrospective study was conducted to assess the Incidence and prevalence of COPD in south India. The data reported that13680 patients who underwent PFT during the 3 year period there were 9702 males and 4164 females. 946 patients (6.8%)were diagnosed to have COPD according to COPD guide lines of which 811were males (86%)and 135 more females (14%).smoking was seen in 830 patients(87.7%)&116patients were non smokers (12.3%).mean age was 44 .65 and 4.15years.out of 946 patients 284 had mild COPD 30%.286 had moderate diseases30% and the remaining 387 patients 40% had sever COPD .The overall prevalence of COPD in presence study was 6.85%with prevalence of disease in males being 7.4%and females 4.64%.their for, there is a significant burden of COPD as disease in the community with overall prevalence of 6.85 in south India

Dechman, G., 2005 A study was conducted at Canada to assess the effects of imposed pursed lips breathing on respiratory mechanics and dyspnea at rest and during exercise in COPD. Eight patients with stable mild to severe COPD participated in the study. The subjects underwent pulmonary function test and bicycle ergometry.

Breathlessness visual analogue scale, inspiratory capacity maneuvers and esophageal balloon were the instruments used. The study result revels that the patients had no dyspnea at rest, during exercise dyspnea was variably affected by pursed lip breathing. Changes in the individual score were significantly correlated with changes in the end expiratory lung volume (p=0.002) and mean inspiratory ratio of pleural pressure to the maximal static inspiratory pressure generating capacity (P=0.001). This study concluded that pursed lips breathing can have a variable effect on dyspnea when performed volitionally during exercise by patients with COPD. The effect of pursed lip breathing on dyspnea is related to the combined change that it promotes in the tidal volume and end expiratory lung volume and their impact on the available capacity of the respiratory muscles to meet the demands placed on them in terms of pressure generation

Robert Bianchi MD 2004 A study was conducted at COPD is estimated to be responsible for more than 13.4 million physician visits and 13% of hospitalizations nationally. These hospitalizations are usually caused by acute exacerbations characterized by an increase in symptoms including dyspnea or shortness of breath (SOB), cough, wheezing and sputum production, that affects an individual's quality of life more than does the physiological impairment. Despite optimal medical and pharmacological therapy, most people with COPD continue to suffer chronic and progressive dyspnea and other symptoms of cough and fatigue.

The study result revels that the patients had no dyspnea at rest, during exercise dyspnea was variably affected by pursed lip breathing. Changes in the individual score were significantly correlated with changes in the end expiratory lung volume (p=0.002) and mean inspiratory ratio of pleural pressure to the maximal static

inspiratory pressure generating capacity (P=0.001). This study concluded that pursed lips breathing can have a variable effect on dyspnea when performed volitionally during exercise by patients with COPD. The effect of pursed lip breathing on dyspnea is related to the combined change that it promotes in the tidal volume and end expiratory lung volume and their impact on the available capacity of the respiratory muscles to meet the demands placed on them in terms of pressure generation

M Vtacca 1998A study was conducted at Japan to evaluate the effects of a short term pulmonary rehabilitation program on patients with chronic respiratory failure due to pulmonary emphysema. 15 samples were selected for the program which includes pursed lip breathing, diaphragmatic breathing, respiratory muscle stretch gymnastics and walking with synchronized breathing. Visual analogue scale, 6-minute walk. The study reveals that there is a significant decrease in dyspnea ($P<0.01$), increase in functional exercise capacity ($P<0.01$) and significant decrease in total lung capacity (TLC) and residual volume (RV) ($P<0.01$). The findings suggest that this program relieves dyspnea, increases functional exercise capacity, and decreases

Total lung capacity and residual volume on patients with chronic respiratory failure due to pulmonary emphysema

NEED FOR THE STUDY

The World Health Organization (WHO) **(2013**) estimated 300 million people suffer from copd and 2, 55,000 people died of copd (WHO). The copd statistics in India in 2004 details 57.5 estimated total deaths and 5.1 estimated deaths per 1 lakh population. And 277 disability adjusted life year (DALYs) per 1 lakh and 268 age standardized disability adjusted life year (DALYs) per 1 lakh. The global statistics of asthma (WHO 2004) details 2, 87,000 (0.5%) of total global deaths. In this 1, 51,000 men, 1,36,000 women and DALYs includes 8,856,000 for men 7,461,000 women and 1.8 standardized death per 1 lakh and 19.4 million disability and constitutes 6.6 million YLD among men and 1.8 million YLD in high income countries.

Globally as of (2011) COPD is estimated to result in economic costs of $ 2.1 trillion ,half of which occurring in the developing world .the 6th commonest cause of death., males had a higher prevalence of COPD 11.1 percentage compared to females 4.5 percentage. Statistics shows that chronic obstructive pulmonary disease is a leading cause of death and disability in the United States. Data from a national health survey suggests that at least 24 million Americans were affected by the disease in 2000.Global prevalence of 10.7%cofidence interval 7.3-14% in the age group the number of copd cases increased to 3.84 million in 2010 .this increased of 68.9 %was mainly driven by global demographic changes .across the who regions the highest prevalence was estimated in the American 13.3% in 1990 and 15.2%2010 and lowest in south east.

United status(2011) Chronic obstructive pulmonary disease is one of the leading cause of death, illness and disability in the united states and estimates 10 million American adults were diagnosed with the condition in 2000,but the data from the national health survey suggest that as many as 24 million Americans were actually affected .in 2000 chronic obstructive caused about 119,000 deaths,726,000 hospitalizations and 1.5 million visits to hospital emergency rooms. A study was to explore dyspnea self management in African American with chronic obstructive pulmonary disease resulting from sarcoidosis. The study concluded that self care actions should be encouraged and thought and self care resources facilitated. The breathing techniques used by patients with copd and those with sarcodosis should be considered during patient and family education .Hence the investigator felt that it is very essential to educate about breathing exercises to reduce the dyspnea in respiratory diseases patients

In state Karnataka prevalence of chronic obstructive pulmonary disease is 64.3 percentage affected chronic obstructive pulmonary disease. Prevalence of chronic cough is an important indicator of respiratory morbidity in the community

Murthy K JR(2010) A pre- experimental study was conducted on breathlessness in patients with COPD. The twenty two patients with mild to severe COPD were studied. Dyspnea was assessed by a Modified Borg Scale. The patients with deep breathing exercises exhibited a significant reduction in end expiratory volume of the chest wall. Deep breathing exercises decreases end expiratory volume of chest wall and reduces breathlessness. The study showed that a deep breathing exercise is more effective in reducing dyspnea in COPD patients

Das S, Mukherjee S, Kundu et al (2008) A comparative study was conducted on effects of deep breathing exercises on dyspnea at rest and during exercise in COPD. The eight COPD patients (6male and 2 female) with a mean age of 11 years. Deep breathing exercises promoted a slower and deeper breathing pattern both at rest and during exercise. Deep breathing have a variable effect on dyspnea when performed voliticully during exercise by patient with COPD. The study showed effectiveness of deep breathing exercises in patient at rest.

Geddes E L, et al (2008) conducted a study to update an original systematic review to determine the effect of inspiratory muscle training (IMT) on inspiratory muscle strength and endurance, exercise capacity, dyspnea and quality of life for adults with chronic obstructive pulmonary disease (COPD). Randomized controlled trials, with adults with stable COPD, comparing IMT to sham IMT or no intervention, low versus high intensity IMT, and different modes of IMT were included. Nineteen of 274 articles in the original search met the inclusion criteria. The updated search revealed 17 additional articles; 6 met the inclusion criteria, all of which compared targeted, threshold or normocapneic hyperventilation IMT to sham IMT. An update of the sub-group analysis comparing IMT versus sham IMT was performed with 10 studies from original review and 6 from the update.

Sixteen meta-analyses are reported. Results shown that significant improvements in inspiratory muscle strength PI(max), PI(max) % predicted, peak inspiratory flow rate), inspiratory muscle endurance (RMET, inspiratory threshold loading, MVV), exercise capacity Ve(max), Borg Score for Respiratory Effort, 6MWT), Transitional Dyspnea Index (focal score, functional impairment, magnitude of task, magnitude of effort), and the Chronic Respiratory Disease Questionnaire

(quality of life). Results suggest that targeted, threshold or normocapneic hyperventilation IMT significantly increases inspiratory muscle strength and endurance, improves outcomes of exercise capacity and one measure of quality of life, and decreases dyspnea for adults with stable COPD.

Framingham (2007) study focused on the long term predictive power of vital capacity and forced exhalation volume as the primary markers for life span and pulmonary function measurement appears to be an indicator of general health and vigour and literally to a measure of living capacity. Breathing exercises can be trained for both negative and positive influences on health. Our exercise promotes relaxation and proper breathing technique will strengthen the lungs. There are many benefits of breathing exercise that is it cleanses the body diseases, steadies the mind and helps in concentration, improve digestion and improve appetite.

United status Chronic obstructive pulmonary disease is one of the leading cause of death, illness and disability in the united states and estimates 10 million American adults were diagnosed with the condition in 2000, but the data from the national health survey suggest that as many as 24 million Americans were actually affected .in 2000 chronic obstructive caused about 119,000 deaths, 726,000 hospitalizations and 1.5 million visits to hospital emergency rooms. A study was to explore dyspnea self management in African American with chronic obstructive pulmonary disease resulting from sarcoidosis.the study concluded that self care actions should be encouraged and thought and self care resources facilitated. The breathing techniques used by patients with copd and those with sarcodosis should be considered during patient and family education .Hence the investigator felt that it is

very essential to educate about breathing exercises to reduce the dyspnea in respiratory diseases patients.

Masoli et al (2003) A study was conducted by showed the global burden of asthma estimates approximately 300 million people worldwide currently have asthma. The study suggested that asthma prevalence increases globally by 50% every decade. With the projected increase in the proportion of worlds urban population from 45-50% in 2025.there is likely to be marked increase in the number of asthmatics' worldwide over the next two decades. It is estimated that there may be additional 100 million persons with asthma by 2025. Deep breathing exercise selected in this study for improving the pulmonary function of the patients are simple, can be performed without any expenses or complex devices and doesn't require a particular area in a hospital for the practices.

Breslin EH, et al (1992) conducted the study to indicate a change in the pattern of chest wall muscle recruitment and improved ventilation with pursed-lip breathing (PLB) in COPD. Pursed lip breathing led to increased rib cage and accessory muscle recruitment during inspiration and expiration, increased abdominal muscle recruitment during expiration, decreased duty cycle of the inspiratory muscles and respiratory rate, and improved SaO_2. In addition, PLB resulted in no change in pressure across the diaphragm and a less fatiguing breathing pattern of the diaphragm. Changes in chest wall muscle recruitment and respiratory temporal parameters concomitant with the increased SaO_2 indicate a mechanism of improving ventilation with PLB while protecting the diaphragm from fatigue in COPD. Alterations in the pattern of respiratory muscle recruitment with PLB may be associated also with the amelioration of dyspnea. The study suggested further investigation is necessary to

explore the relationship between the pattern of respiratory muscle recruitment during PLB and dyspnea

Elisabeth Westerdahl,et al (1994) A study was conducted for validation of a structured questionnaire and prevalence of COPD in rural area of Mysore. The study included 900 adults above 40 years. The instruments used were structured questionnaire and spirometry. Data was collected by survey method. The study reveals that the structured questionnaire is a useful tool for the screening of COPD infield studies and the total prevalence of COPD was 7.1%. Males had a higher prevalence (11.1%) compared to females (4.5%).) conducted a study regarding breathing pattern retaining and exercise in persons with chronic obstructive pulmonary disease. They used a method in pulmonary rehabilitation to help alleviate the symptoms of dyspnea endured by people who suffer from airflow obstruction secondary to chronic obstructive pulmonary disease (COPD). Other techniques such as biofeedback also have been successfully used. The article described the altered breathing patterns used by patients with COPD at rest and during physical activity regarding techniques of breathing pattern retraining that have been developed to improve the capacity of persons with COPD to perform activities of daily living, a primarily rehabilitative outcome

Cary P et al (1990) A randomized, control study was conducted at Los Angeles to assess the efficacy of pursed lip breathing: a breathing pattern retraining strategy for dyspnea reduction. 40 samples were randomized to 1) pursed lip breathing 2) expiratory muscle training or 3) control. Changes in dyspnea and functional performance was assessed by modified Borg after 6 minute walk distance (6MWD), shortness of breath Questionnaire, Human Activity Profile and physical

function scale of short form 36-item Health Survey. The study result reveals that there is a significant reduction for the modified Borg Scale after 6 MWD (P=0.05) and physical function (P=0.02) from baseline to 12 weeks were only present for pursed lip breathing. The findings suggests that pursed-lips breathing provided sustained improvement in exertion dyspnea and physical function.

STATEMENT OF THE PROBLEM

"A study to assess the effectiveness of deep breathing exercise among patients with chronic obstructive pulmonary disease who are aged between 50-60 years years in selected hospital at Dindigul district"

OBJECTIVES OF THE STUDY

- To assess the breathing difficulty before and after breathing exercise among chronic obstructive pulmonary disease patients in control and experimental group.
- To evaluate the effectiveness of deep breathing exercise among chronic obstructive pulmonary disease patients in experimental group.
- To find out the association between the pretest level of breathing difficulty with selected demographic variables in control and experimental group.

HYPOTHESIS

H_1: The mean post test level of breathing difficulty will be significantly lower than the mean pre test level of breathing pattern among chronic obstructive pulmonary disease in experimental group

H_2: There is a significant difference between the mean pretest and mean post test level of breathing difficulty in experimental group.

H_3: There will be a significant association between the pretest level of breathing difficulty with selected of demographic variables of experimental group

OPERATIONAL DEFINITIONS

Assessment

It is a process of documenting the information usually in measurable terms

Effectiveness

It refers to the significant reduction on dyspnea determined by significant difference in pre and post test assessment score.

Deep breathing exercise

It is a type of diaphragmatic breathing which helps in the expansion of lung tissue surface. There by increasing the area of respiratory exchange.

Chronic obstructive pulmonary disease

Chronic obstructive pulmonary disease results from increased resistance to airflow, because of airflow obstruction or airflow narrowing .chronic obstructive disease is a progressive inflammatory disease characterized by chronic obstruction in the peripheral bronchus and pulmonary emphysema.

Location

In this study, patients' who are those diagnosed as COPD and got admitted in the selected hospital at Dindigul district.

ASSUMPTION

- After the breathing exercise breathing difficulty will be improve among patients with chronic obstructive pulmonary disease in experimental group
- Deep breathing exercise reduce breathlessness
- Breathing exercise training has some effect on knowledge of patient with respiratory diseases

DELIMITATION

- The data will be collected for 6 weeks
- Who those are admitted at time of hospital
- Patients having severe dyspnea.

PROJECT OUTCOME

- This study will be able to evaluate the effectiveness of deep breathing exercise to improve the breathing pattern among chronic obstructive pulmonary disease
- Non pharmacological approaches
- Deep breathing exercise will improve the breathing patte

CHAPTER-II

REVIEW OF LITERATURE

CHAPTER - II

REVIEW OF LITERATURE

Review of literature is systematic identification, critical analysis and reporting of existing information on the topic of material for the study. The review of literature is a key step in research process excessive review of literature relevant to research was alone to collect maximum information for laying foundation of this study. The purpose of the review of literature is to gain maximum relevant information and perform the study in a scientific m Review of literature is systematic identification, critical analysis and reporting of existing information on the topic of material for the study.

Review of literature is organized under following categories:

1) Studies related to chronic obstructive pulmonary disease.
2) Studies related to incidence of chronic obstructive pulmonary disease
3) Studies related to deep breathing exercise among chronic obstructive pulmonary disease patients.

Studies related to chronic obstructive pulmonary disease.

GUNEN.H ET AL (2008) A study conducted in different categories of chronic obstructive pulmonary disease in railway workers on Eastern India to evaluate the pulmonary function showed the pulmonary function test values were significantly deteriorated in all categories of chronic obstructive pulmonary disease patients as compared to normal non- smokers, significant deterioration was observed emphysematous patients when compared to other categories and chronic obstructive

pulmonary disease patients. Chronic obstructive pulmonary disease (COPD) is the fourth leading cause of death and 13th leading cause of burden of diseases worldwide with projected increases in its contributions over the next decade.

The global initiative for chronic obstructive lung disease (GOLD) has classified COPD as ‘a disease state characterized by airflow limitation that is not fully reversible. The airflow limitation is usually both progressive and associated with an abnormal inflammatory response of the lungs to noxious particles or gases’ Active smoking is the major risk factor for COPD worldwide, and the risk attributable to active smoking in COPD varies from 40 to 70% according to the country.

RON HALBERT ET AL (2008) Although smoking remains the predominant risk factor, it needs to be emphasized that prevalence of COPD in non-smokers suggests the existence of other risk factors such as passive smoking, occupational exposure, and indoor air pollution .Recently, exposure to biomass smoke resulting from household combustion of solid fuels has been identified as an important risk factor for COPD, with rural women in developing countries bearing most of this disease burden). In addition to respirable particulate matter, biomass combustion results in high levels of pollutants such as carbon monoxide, oxides of nitrogen and sulphurformaldehyde, benzo(a)pyrene, and benzene that are major source of respiratory irritants in the etiopathogenesis of COPD Although COPD affects twice as many males as females, this difference will diminish given the fact than more and more females throughout the world have taken up smoking in the past few years in developed countries, and non-smoking females are exposed to bio mass combustion products in developing countries.

JOSHI J.M ETAL (2007) Recent studies have made important contributions in examining temporal spatial, or multi pollutant patterns, in addition to day-to-day or seasonal variability in household concentrations and exposures in biomass using home. Collectively, the evidence from these studies shows that rural women, children in solid fuel using settings experience extremely high levels of air pollutants often at least an order of magnitude higher than what is commonly considered as safe levels of exposure. WHO's Comparative Risk Assessment (15) estimated that about 950,000 children die each year from acute lower respiratory infections as a result of these exposures worldwide along with about 650,000 pre mature deaths of women from COPD and lung cancer.

Studies related to incidence of chronic obstructive pulmonary disease.

According to the latest WHO estimates (2004), currently 64 million people have COPD and 3 million people died of COPD. WHO predicts that COPD will become the third leading cause of death worldwide by 2030 The World Health Organization (WHO) estimates that COPD as a single cause of death shares 4th and 5th places with HIV/AIDS (after coronary heart disease, cerebro vascular disease and acute respiratory infection). The statistics of incidence of COPD in world is as follows,

The WHO estimates that in 2007, 2.74 million people died of COPD worldwide. In 1990, a study by the World Bank and WHO ranked COPD 12th as a burden of disease; by 2020, it is estimated that COPD will be ranked 5th According to the WHO, passive smoking carries serious risks, especially for children and those chronically exposed. The WHO estimates that passive smoking is associated with a 10 to 43 percent increase in risk of COPD in adults. Although cigarette smoking is the

primary cause of COPD, the WHO estimates that there are 400,000 deaths per year from exposure to biomass fuels.

In Algeria, the prevalence of tuberculosis and acute respiratory infection has decreased since 1965, but an increase in chronic respiratory diseases (asthma and COPD) has been observed in the last decade. COPD is estimated to be 6.2 percent in 11 Asian countries surveyed by the Asian Pacific Society of Respiratory Diseases. The use of biomass fuels, especially in the rural areas, contributes towards a higher prevalence of COPD in some of these countries and suggests that COPD may be significantly greater in this region of the world than previously estimated.

In China, where it is estimated that over 50 percent of the men smoke, chronic respiratory diseases are the 4th leading cause of death in large urban areas, but the first leading cause of death in rural areas. In China, smoking rates among women remain low (estimated at 6 percent), although the prevalence of COPD in men and women is about the same. This point to the importance of risk factor other than smoking as a cause for COPD in Chinese women.

In Malaysia, respiratory illness is the primary cause of visits to health clinics and outpatient hospital clinics. It is estimated that 50 percent of the male population smokes, with higher rates in the rural areas than the urban areas. COPD is the third leading cause of death in the U.S.(It was originally projected to be the third leading cause of death for both males and females by the year 2020. - The Centers for Disease Control (CDC) and Prevention's National Center for Health Statistics (NCHS) released a report on Dec 10, 2010, "Deaths: Preliminary Data for 2008," confirming that Chronic Obstructive Pulmonary Disease (COPD) became the third leading cause of death in the U.S. for 2008.)

The NHBLI reports 12.1 million adults 25 and older were diagnosed in 2001.It is estimated that there may currently be 16 million people in the United States currently diagnosed with COPD.

HARRIS. ET AL (2006) It is estimated that there may be as many as an additional 14 million or more in the United States still undiagnosed, as they are in the beginning stages and have little to minimal symptoms and have not sought health care yet. Men are 7 times more likely to be diagnosed with emphysema then women, though the prevalence in women is on a steady increase and this number is lowering with each year People over the age of 50 are more likely to be considered disabled, however, the damage started years before About 1.5 million emergency department visits by adults 25 and older were made for COPD in 2000.More emergency department visits for COPD were made by adult females than adult males (898,000 vs. 651,000).

- About 726,000 hospitalizations for COPD occurred in 2000. More females than males were hospitalized for COPD (404,000 vs. 322,000).
- According to the Center for Disease Control (CDC), there were 124,816 deaths in the US in 2002
- It is the only major disease with an increasing death rate, rising 16% [9]

COPD prevalence estimated based Global Initiative for COPD staging criteria were adjusted for the target population. Logistic regression was used to estimate adjusted odds ratios for COPD associated with 10 years increments and 10 year pack increment. Meta-analysis provided pooled for these risk factors. The findings of stage 2 or higher COPD was 10.1% for men and 8.5 % for women. The ORs for 10 years

age increments were much the same across sites and for women and men. The pooled estimate was 1.94% per 10 years increment. Sites- specific pack year ORs varied significantly in women, but not in men.

EMMA DICKINSO) N ET AL (2006) A study was conducted on COPD is a common diseases, the early diagnosis of which allows effective management and treatment. The prospective observational longitudinal study comprised 164 high risk smokers aged 40 and 76 years. Age, sex, weight, height and smoking habits were recorded and spirometry was performed. Patients were informed of their result and given brief advice on how to stop smoking. After 3 years, the patients underwent the same evaluation. The result of the study revealed that 22% of the smokers were diagnosed with COPD. Three year later, an additional 16.3 % were diagnosed as having COPD, and disease had worsened in 38% of those already diagnosed. Of the patients with FEV1 less than 90%, 44.8% develops COPD. And accelerated decrease in FEV1 was found in 18% of the patients. Mean tobacco consumption in 1999 was 28.1 pack years in subject without COPD and 31.7 packs years in those with COPD, whereas in 2002, consumption was 30.6 packs in the patients with COPD and 31.9 packs year in those without . In the years, 22.8% had stopped smoking

Studies related to deep breathing exercise

Collins EG**, et al (2003**) conducted a study regarding breathing pattern retaining and exercise in persons with chronic obstructive pulmonary disease. They used a method in pulmonary rehabilitation to help alleviate the symptoms of dyspnea endured by people who suffer from airflow obstruction secondary to chronic obstructive pulmonary disease (COPD). Other techniques such as biofeedback also have been successfully used. The article described the altered breathing patterns

used by patients with COPD at rest and during physical activity. The literature is reviewed regarding techniques of breathing pattern retraining that have been developed to improve the capacity of persons with COPD to perform activities of daily living, a primarily rehabilitative outcome.

Ritz T, et al (1997) conducted a review of the behavioral interventions in asthma and breathing training. And the review found that the systematic documenting in the benefits of these techniques in asthma patients. The physiological rationale of abdominal breathing in asthma is not clear, and adverse effects have been reported in chronic obstructive states. Theoretical analysis and empirical observations suggest positive effects of pursed-lip breathing and nasal breathing but clinical evidence is lacking. Modification of breathing patterns alone does not yield any significant benefit. There is limited evidence that inspiratory muscle training and hypoventilation training can help reduce medication consumption, in particular beta-adrenergic inhaler use. Breathing exercises do not seem to have any substantial effect on parameters of basal lung function. They suggested additional research on the psychological and physiological mechanisms of individual breathing techniques in asthma, differential effects in sub-groups of asthma patients, and the generalization of training effects on daily life.

Nihon Kokyuki Gakkai Zasshi et al (1996) conducted a study to evaluate the effects of a short-term pulmonary rehabilitation program on dyspnea, exercise capacity, and lung function.15 patients with chronic respiratory failure due to pulmonary emphysema were enrolled in such a program for 3 weeks as inpatients. The program consisted of pursed lip breathing, diaphragmatic breathing, respiratory muscle stretch gymnastics, and walking with synchronized breathing. The results had

shown that dyspnea as measured with a visual analogue scale at the end of a 6-minute walk before and after the program (49.7 +/- 4.0% to 24.2 +/- 3.8%) decreased significantly ($p < 0.01$). As a measure of functional exercise capacity, the 6-minute walking distance (226.9 +/- 32.4 m to 292.1 +/- 35.8 m) increased significantly ($p < 0.01$). As an indicator of maximal exercise capacity, endurance time on an incremental treadmill test did not improve. Spirometric data did not change during the study. Total lung capacity (TLC) (8.44 +/- 0.70 L to 7.58 +/- 0.74 L) and residual volume (RV) (5.13 +/- 0.53 L to 4.28 +/- 0.59 L) decreased significantly ($p < 0.01$). The findings suggest that this program relieves dyspnea, increases the functional capacity and decrease the functional exercise capacity, and decreases TLC and RV on patients with chronic respiratory failure due to pulmonary emphysema

Sutbeyaz ST, et al (1996) conducted a study to determine whether two types of exercise--breathing retraining (BRT) and inspiratory muscle training (IMT)--improve on cardiopulmonary functions and exercise tolerance in patients with stroke. They used a randomized controlled trial technique in which forty-five in patients with stroke (24 men, 21 women) were recruited for the study. The subjects were randomized into three groups: 15 assigned to receive inspiratory muscle training (IMT); 15 assigned to received breathing retraining, diaphragmatic breathing and pursed-lips breathing (BRT); 15 assigned to a control group. All study groups participated in a conventional stroke rehabilitation programme. Each subject underwent pulmonary function and cardiopulmonary exercise tests. The results shown that after the training programme, the IMT group had significantly improved forced expiratory volume at 1 second (FEV (1)), forced vital capacity (FVC), vital capacity (VC), forced expiratory flow rate 25-75% (FEF 25-75%) and maximum voluntary

ventilation (MVV) values compared with the BRT and control groups, although there were no significant differences between the BRT and control groups (P<0.01). Peak expiratory flow rate (PEF) value was increased significantly in the BTR group compared with the IMT and control groups. The IMT group also had significantly higher peak oxygen consumption (VO (2peak)) than the BRT and control groups, although there were no significant differences between the BRT and control groups (P<0.001). There was a statistically significant increase in maximum inspiratory pressure (PI (max)) and maximum inspiratory and expiratory pressure (PE (max)) in the BRT group and, PI (max) in the IMT group compared with baseline and the control group. In the IMT group, this was associated with improvements in exercise capacity, sensation of dyspnea and quality of life.

Breslin EH, et al (1994) conducted the study to indicate a change in the pattern of chest wall muscle recruitment and improved ventilation with pursed-lip breathing (PLB) in COPD. Pursed lip breathing led to increased rib cage and accessory muscle recruitment during inspiration and expiration, increased abdominal muscle recruitment during expiration, decreased duty cycle of the inspiratory muscles and respiratory rate, and improved SaO_2. In addition, PLB resulted in no change in pressure across the diaphragm and a less fatiguing breathing pattern of the diaphragm. Changes in chest wall muscle recruitment and respiratory temporal parameters concomitant with the increased SaO_2 indicate a mechanism of improving ventilation with PLB while protecting the diaphragm from fatigue in COPD. Alterations in the pattern of respiratory muscle recruitment with PLB may be associated also with the amelioration of dyspnoea. The study suggested further investigation is necessary to

explore the relationship between the pattern of respiratory muscle recruitment during PLB and dyspnea.

Van der Schans CP, et al (1992) conducted a study to assess the effect of breathing with a positive expiratory pressure of 5 cm H_2O, simulating pursed lips breathing (SPLB), on respiratory muscle activity and pulmonary function during induced airway obstruction. In twelve asthmatic patients, tonic and phasic electromyography (EMG) activity of the following muscles was obtained: scalene muscle, parasternal muscle, and abdominal muscles. Pulmonary function and EMG measurements were performed before and after propranolol induced airway obstruction. The results shown that simulated pursed lips breathing resulted in a significant increase of functional residual capacity and tidal volume both at baseline and during airway obstruction. Phasic respiratory muscle activity during PEP breathing increased especially at baseline. It shown the beneficial effects of breathing with a positive expiratory pressure of 5 cm H_2O, which is similar to pursed lips breathing, cannot be explained by changes in respiratory muscle activity or pulmonary function

Das S, Mukherjee S, ET AL (1992) A pre- experimental study was conducted on breathlessness in patients with COPD. the twenty two patients with mild to severe COPD were studied. Dyspnea was assessed by a Modified Borg Scale. The patients with deep breathing exercises exhibited a significant reduction in end expiratory volume of the chest wall. Deep breathing exercises decreases end expiratory volume of chest wall and reduce breathlessness. The study showed that deep breathing exercises are more effective in reducing dyspnea in COPD patients. Dyspnea at rest and during exercise in COPD. The eight COPD patients (6male and 2

female) with a mean age of 11 years. Deep breathing exercises promoted a slower and deeper breathing pattern both at rest and during exercise. Deep breathing have a variable effect on dyspnea when performed voliticully during exercise by patient with COPD. The study showed effectiveness of deep breathing exercises in patient at rest

Minas M ,ET AL (1992) A experimental study was conducted on the impact of deep breathing exercises on breathing pattern and dyspnea in severe COPD patients. The subjects of the study were 125 patients. This study shows deep breathing exercise is effective in improving breathing pattern and in patient with COPD A cohort study was conducted on efficient integrated education for older patients with COPD using deep breathing exercises. A total of 85 patients. This study shows integrated education for older patients with COPD effectively improved patients deep breathing exercises.

Mc Glone ,ET AL (1991) A pre experimental was conducted on effectiveness of deep breathing exercises in COPD. A randomized controlled clinical trial. 145 subjects were included among them 100 men and 45 women. Deep breathing exercises is well tolerated in COPD and significantly improve dyspnea randomized controlled trial study was conducted on hospital based physiotherapeutic exercise in COPD self management among 142 patients. Out of which 74 intervention and 68 control patients were included. This study demonstrates that a hospital based re activation programme improves exercise capacity in patient with moderately and severe COPD. Exercise tolerance capacity is more in COPD patients. A study was conducted on the effectiveness of deep breathing exercise in managing breathless in respiratory illness. 220 subjects were included and the study revealed that breathlessness is a debilitating and distressing symptom to manage. Therefore, deep

breathing exercise was one of the effective non pharmacological intervention in treating dyspnea

Izadi-avanji FS, ET AL (1990) A true experimental study was conducted on deep breathing exercise on dyspnea in moderate COPD patients. The subjects of the study were 240. Out of which 120 subjects were manipulated and the rest were getting no intervention. According to the study, it revealed that there were considerably more effective to the subject given exercise rather than those without intervention. Thus it proved that deep breathing exercise was better than compared to other group .

CONCEPTUAL FRAME WORK

The conceptual frame work of the present study was developed by the investigator is based on Nola benders health promotion model (1997)that is mostly applicable while dealing with improve the breathing pattern and promoting deep breathing exercise

Major concept

A. Person

Man has the ability to express human health potential and has the capacity for reflective self awareness ,including the assessment of his own competencies

The important of a individual's unique personal factors or characteristics and experiences will depend on the target behavior for health promotion

B. Health

- Health promotion is defined as client behavior towards developing well being and actualization human health potential
- Health protection is client behavior geared towards preventing illness detecting it early or maintaining function

C. Nursing

- The trend towards health promotion has created the opportunity for nurse to strengthen the professions influences on health information disseminate information that promotes an educated public and assist individuals and communities to change long –standing health behavior

D. Environment

- ♦ Individuals are more apt to perform behavior if they are comfortable with the environment versus feeling alienated environment that are consider safe as well as facilitate health promotion behavior

Key concept

Individual characteristics and experiences

- ➢ Prior related behavior
- ➢ Most of the person have breathing problem and less know about the deep breathing exercise and to treat for chronic obstructive pulmonary disease
- ➢ Personal factors

  People have inadequate experience about deep breathing exercise

Behavior specific cognitions and affect

- Perceived benefits of action
- In this study the effectiveness of deep breathing exercise among chronic obstructive pulmonary disease to improve breathing pattern
- **Perceived barriers to action**
  - ➢ Perceived self –efficacy
  - ➢ Activity –related affect
  - ➢ Interpersonal influences
  - ➢ Situational influences

In this study the interpersonal and situational influences act as a perceived barrier to action

Behavior outcomes

- Commitment to a plan of action
- Immediate competing demands and preferences
- Health –promoting behavior

  After deep breathing exercise, most of the person adequate information and effectiveness deep breathing exercise which indicated health promoting behavior

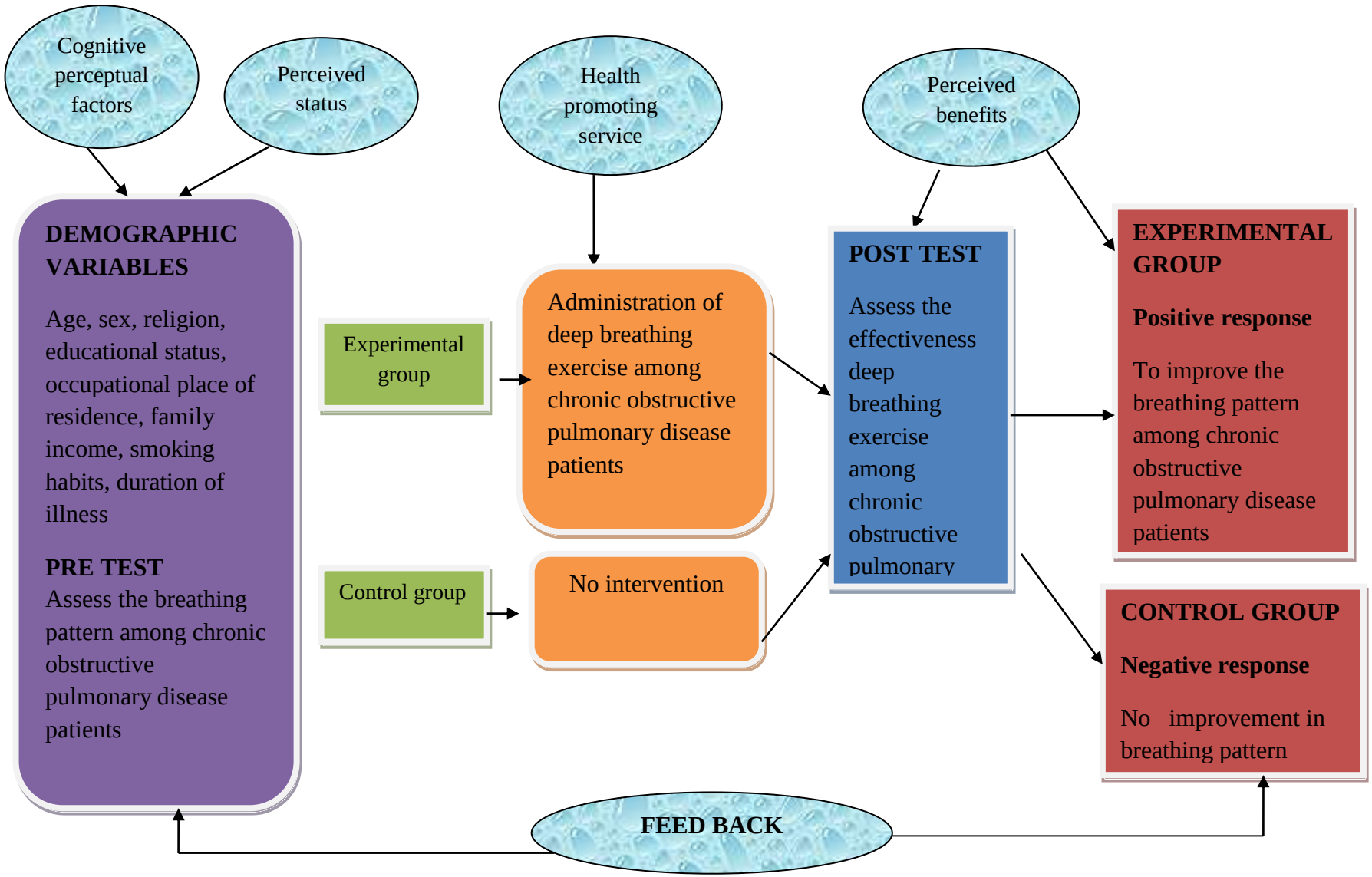


Figure: 1 Nola benders health promotion model (1997)

CHAPTER-III

METHODOLOGY

CHAPTER III

METHODOLOGY

The methodology of research indicate the general pattern of organizing, the procedure for gathering valid and reliable data for the problem under investigation (pilot andbeck, 2010)

Methodology is a significant part of any study, which enables the research to logically project the research undertaken .research methodology is the systemic way to carry out an academic study and research in flawless manner.

The chapter includes research design, sample, population, and sample size, sampling technique, development of the tool, content validity, pilot study, ethical considerations .data collection procedure and plan for data analysis

RESEARCH APPROACH

The researcher approaches is a adopted a quantitative evaluative approach.

RESEARCH DESIGN

The research design is the overall plan, structure and method of investigation of answers the research question or problem.

For this study research design is quasi experimental. Pre experimental (one group pre and post test) design will be used for the study.

SCHEMATIC REPRESENTATION OF THE STUDY

The Schematic representation of the study design is given below.

Group	Pre test	Intervention	Post test
Experimental Group	O_1	X	O_2
Control Group	O_1	-	O_2

O_1, O_2 - Effect of deep breathing exercise

O_1- Assessment of breathing pattern among chronic obstructive pulmonary disease (pretest)

X- Intervention - deep breathing exercise

O_2 - Assessment of breathing pattern among chronic obstructive pulmonary disease (posttest)

VARIABLES UNDER THE STUDY

A variables is defined as a concept or abstract idea that can be described in measurable terms .In research, this term refers to the measurable characteristics, qualities, traits, or attributes of a particular individual, object, or situation being studied.

There are two types of variables. were identified in this study. They are independent variables and dependent variables.

Independent variables

An independent variables is a variables that is manipulated to determine the value of a dependent variables

- deep breathing exercise

Dependent variable

A dependent variables is what you measure in the experiment and what is affected during the experiment

- chronic obstructive pulmonary disease (breathing difficulty)

Demographic variables :

Personal statistics that include such information as income level, location, ethnicity, race and family size.

Age, sex, education, marital status, occupation, previous history of smoking habits, continuous breathing difficulty presented, income of the family, previous history of respiratory disease

SETTING OF THE STUDY

Setting is the general location and condition in which data collection takes place for the study (pilot, and beck, 2010)

The research was conducted at selected hospitals in Dindigul district. The samples for the experimental group were selected from Dindigul GH

Sample

A subset of a population selected to participate in a study (pilot and bungler)

The sample selected for the present study was 60patients admitted in selected hospital at Dindigul district.

Sample size

A sample of 60 chronic obstructive pulmonary disease patients who fulfilled the criteria were selected (30samples for the experimental group and 30 samples for the control group)

Total number of samples includes 60

Sample technique

Sampling is a process of selecting a portion of the population to represent the entire population can be made.

The sampling technique adopted for this study was non probability purposive sampling technique

Sampling criteria

The study samples will be selected keeping in view of the following pre-determined criteria

Inclusion criteria

- Patients who are available during the period and data collection.
- Chronic obstructive pulmonary patients who are willing to participate in this study
- Those who are able to understand and speak Tamil

Exclusion criteria

- Patients who are critical condition**.**
- Using any other complementary treatment
- Who were absent at the time of data collection

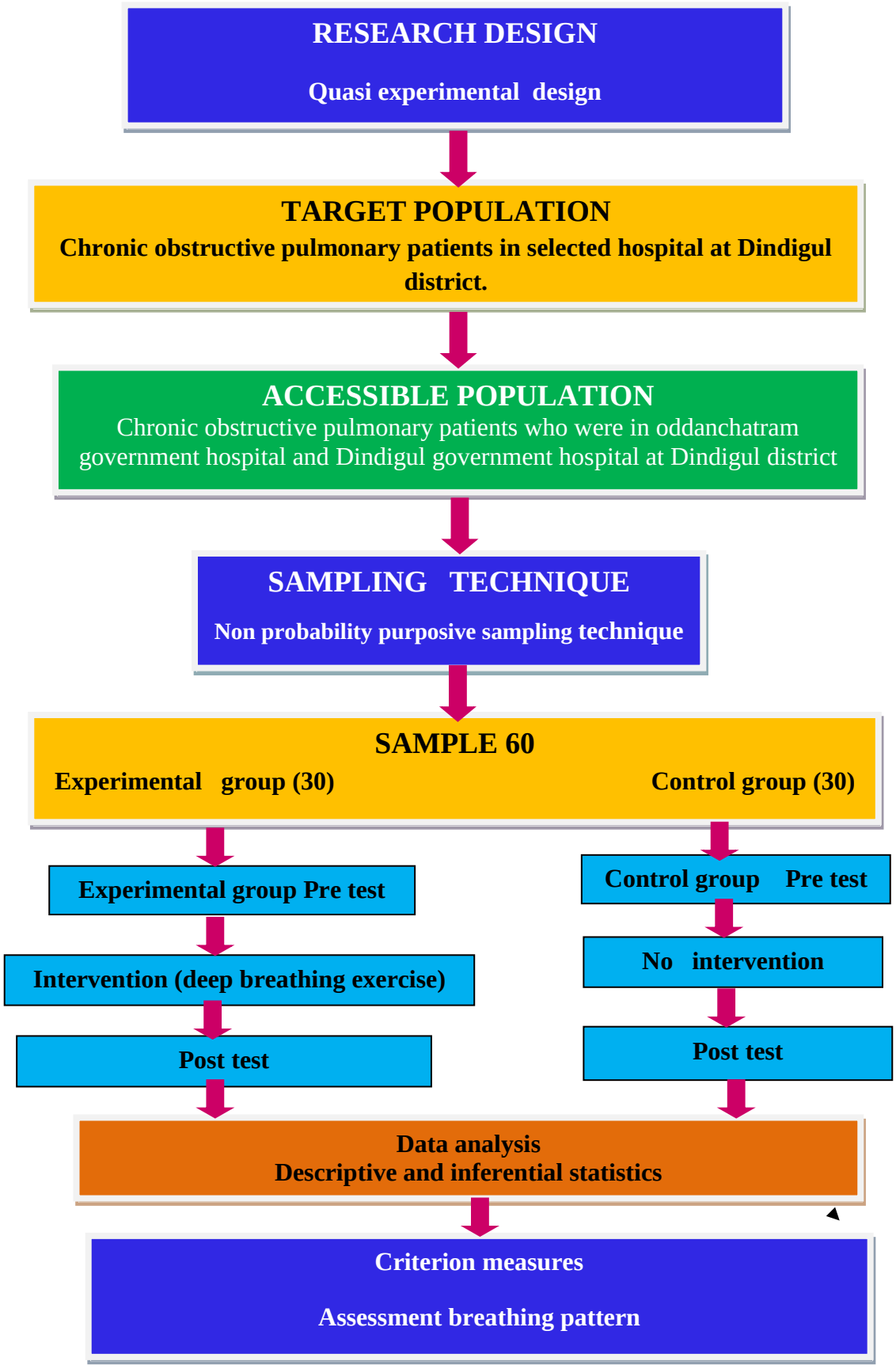


Figure 2. Schematic representation of the research methodology

POPULATION

The population is defined as the entire set of individual or subjects having common characteristics some time universe (pilot and Hungler, 2013)

A population is the entire aggregation of cases that meet a designed set of criteria.

Target population

The entire group of individual or objects to which researchers are interested in generalized the conclusions

All chronic obstructive pulmonary disease selected in Dindigul district

Accessible population

The population research to which the researchers can apply their conclusions

Chronic obstructive pulmonary disease patients who are having breathing problem in selected government hospital at Dindigul district.

DATA COLLECTION INSTRUMENT

Structured interview schedule will be used to collect the personal variables and observation technique will be used to assess breathing pattern

Data will be collected by using following tools:

Section I:

Personal Performa will be used to assess personal variable.(demographical variables)

Section II:

- Breathing pattern will be assessed through modified Borg dyspnea scale

Modified Borg dyspnea scale

Scoring	
0	No breathlessness
1	Very very slight
2	Very slight
3	Slight breathlessness
4	Moderate
5	Some what severe
6	severe breathlessness
7	Very severe breathlessness
8	Very very severe breathlessness
9	Maximum
10	Almost maximum

Scoring interpretation

1-2-mild

3-4-moderate

5-6-severe breath

7-8- very very severe

9-10-Almost maximum

DATA COLLECTION METHOD

- Data will be collected after obtaining prior permission from the hospitals.
- Objective of the study will be explained and informed consent will be taken from the patients.
- Data will be collected through demographic profile and modified dyspnea scale to assess the effectiveness of deep breathing p exercise among CPOD patients ..
- Pre test breathing pattern measured by administering the deep breathing exercise .
- Deep breathing exercise will be administered to the patients same day.

DESCRIPTION DATA COLLECTION

Data collection instrument consists of two Sections

Section- I Demographic variables

Section-II deep breathing exercise

SECTION I

Demographic variables

Consists of questions to elicit demographic data such as, Age, Gender, Education, Occupation, family History of COPD, treatment of COPD, duration of illness marital status, monthly income of the family, smoking habits and continuous breathing difficulty presented at.

SECTION II

Modified Borg dyspnea scale

The modified Borg dyspnea scale (mds)is

SCORING PROCEDURE

1-2-slight

3-4-moderate

5-6-severe breath

7-8- very very severe

9-10-Almost maximum

TESTING OF THE TOOL

Validity

The degree to which an instrument measures what it is intended to measure. Validity of the tool was obtained from five experts in the field of nursing.

Reliability

Reliability of an instrument is the degree of consistency measures that attribute it is supposed to be measured.

In order to established the tool .it was demonstrate to patient there are in sample area .it was established through test and retest method .The reliability of the

tool was established by implementing the tool on chronic obstructive pulmonary disease among experimental and control group

PILOT STUDY

A small scale version of a larger study that is conducted to prepare for the study .a pilot study can involve pretesting a research tool, like a new data collection method

Pilot study was conducted to evaluate the feasibility and reliability of the study. The pilot study was conducted among chronic obstructive pulmonary disease in selected hospital at Dindigul district. 6 sample were taken for pilot study. Pre test was conducted then deep breathing exercise was given as intervention post test was conducted after 15 mint of intervention

PROCEDURE FOR DATA COLLECTION

The investigator got formal permission from the college authority, Sakthi College of nursing and concerned authority of both hospitals. The study participants those who fulfill the inclusion criteria were selected by convenience sampling techniques.30 subjects were assigned in experimental group and 30 in control group.

Brief explanation about the purpose of the study is given to the subjects. Assurance is given that the data will be utilized only for the purpose of the study. Oral consent is obtained from each subject and maintained the confidentiality.

First investigator established the good rapport and introduced the study topic to the patients. The investigator collected data regarding demographic variables. The dyspnea scale was used to assess the level of breathing difficulty in experimental

group before each breathing exercise. The deep breathing exercise was given to the experimental group twice daily for 15-20 minutes. The post test was conducted in experimental group 1 hour after each breathing exercise .For control group, the dyspnea scale was used to assess the pre test level of breathing difficulty twice before giving exercise and post test level of breathing difficulty was assessed 1 hour of each pre test assessment..

Weeks	**Activity**	**Samples**	
		Control group	**Experimental**
1st week	Pre test-Post test	13samples	-
2nd week	Pre test-Post test	17samples	-
3rd week	Pre test-intervention-Post	-	5samples
4th week	Pre test-intervention-Post	-	12 samples
5th week	Pre test-intervention-Post	-	13samples
6th week	Data analysis & interpretation	30 samples	30 samples

STATISTICAL ANALYSIS

Collected data were analyzed by descriptive and inferential statistics. The data related to demographic variables were analyzed by using descriptive measures (frequency, percentage distribution). Inferential statistics of t-test was used to evaluate the effectiveness of deep breathing exercise on level of breathing difficulty.. Chi-square test was used to associate the level of breathing difficulty among patients' chronic obstructive pulmonary disease and their selected demographic variables.

PLAN FOR DATA ANALYSIS

- Data analyzed based on the objective of the study using descriptive inferential statistics
- Frequencies and percentages for the analysis of the demographic data
- Mean score ,percentage and standard deviation for the level of breathing difficulty
- Paired ”t”’ test used for find out the association of experimental and control group.

HUMAN RIGHTS PROTECTION

The proposed study was conducted after the approval of dissertation committee of the college, chief of the hospital also after the consent from the study participants without violating the human rights

CHAPTER-IV

DATA ANALYSIS

AND

INTERPRETATION

CHAPTER – IV

DATA ANALYSIS AND INTERPRETATION

"All meanings, we know, depend on the key of interpretation".

-George Eliot

The process of evaluating data using analytical and logical reasoning to examine each component of the data provided. This form of analysis is just one of the many step that must be completed when conducting a research experiment. Data from various source is gathered ,reviewed, and then analyzed to form some sort of finding or conclusion. There are a variety of specific data analysis method, some of which include data mining, text analytics, business intelligence and data visualizations.

Analysis is a process of organizing and synthesizing data so as to answer research questions and test hypothesis.(Polit and Beck,2010)

This chapter describes analysis and interpretation of data collected to assess the effectiveness of deep breathing exercise among chronic obstructive pulmonary disease in selected hospitals at Dindigul district .The collected data was organized, analyzed and tabulated by using descriptive and inferential statistics. These data were represented as follows.

1. Data on demographic variables of chronic obstructive pulmonary patients in experimental and control group.
2. Data on breathing pattern among chronic obstructive pulmonary disease in experimental and control group.

3. Data on effectiveness of deep breathing exercise among chronic obstructive pulmonary disease patients
4. Data on association between the pretest breathing pattern in experimental group and their selected demographic variables.
5. Data on association between the pretest level of breathing pattern in control group and their selected demographic variables
6. Data on demographic variables of chronic obstructive pulmonary patients in experimental and control group

OBJECTIVE – I

Table: 1 Frequency and percentage distribution of chronic obstructive pulmonary patients according to their Demographic variables.

N=30+30

S,NO	Demographic variables	Control group		Experimental group	
		Frequency	Percentage	Frequency	Percentage
1.	Age in (years):				
	a)50-52 years	5	16.7	4	13.3
	b) 53-55 years	6	20	8	26.7
	c) 56-58 years	10	33.3	9	30
	d)59-60years	9	30	9	30
2.	Gender				
	a) Male	14	46.7	17	56.7
	b) Female	16	53.3	13	43.3
3.	Educational status				
	a) Illiterate	8	26.7	8	26.7
	b) Primary	6	20	7	23.3
	c) High school	7	23.3	9	30
	d) Higher secondary	9	30	6	20
4.	Occupation				
	a) Industrial workers	8	26.7	9	30
	b) Private employee	7	23.3	8	26.7
	c) Government	6	20	4	13.3
	employee	9	30	9	30
	d) Self employee				
5.	Marital status				
	a) Married	15	56.6	22	73.3
	b) Un married	6	20	6	20
	c) Divorce	5	16.7	0	0
	d) Widow	4	13.3	2	6.7

6.	Family history of chronic obstructive pulmonary disease				
	a) Yes	6	20	12	40
	b) No	24	80	18	60
7	Duration of illness				
	a) < 1 year	9	30	10	33.3
	b) 2-5 year	9	30	10	33.3
	c) 6- year	12	40	10	33.3
8	Treatment of chronic obstructive pulmonary disease				
	a) Regular	14	46.7	16	53.3
	b) Irregular	16	53.3	14	46.7
9.	Monthly income of the family				
	a) < 5000	12	40	10	33.3
	b) 5000-10000	9	30	10	33.3
	c) >10000	9	30	10	33.3
10.	Smoking habits				
	a) Yes	12	40	24	80
	b) No	18	60	6	20
11.	Continuous breathing difficulty present at				
	a)wake up	5	16.7	6	20
	b)walking	4	13.3	7	23.3
	c)sleeping at night time	5	16.7	6	20
	d) exercise	16	53.3	11	36.7

CONTROL GROUP

The above table shows that among 30samples, with regards to **age** majority belonged to 51--60years 10(33.3%) and With regards to **gender** male 14(46.7%), and female 16 (53.3%)

Regarding **educational** status illerate 14(46.7%) of them had primary education, 6(20%) of them had high school education 7(23.3), and uneducated 9(30%)

With regards to **homemaker** 8(26,7%) of them are private employee,7(23.3%) of them are in government employee,6(20%) of them are in self employee 9(30%)

In relation to **marital status**, married 22(73.3%) of the samples belonged and unmarried 5 (16.7%) and divorce 10(33.3%), widow 2(6.7%)

Regarding the **family history** of chronic obstructed pulmonary disease yes 6(20%) of them were no and 24(80%)

About **duration if illness** <1year 9(30%) and 2-5 year 9(30%), 6 year 12 (40%) samples.

Regarding the **treatment** of chronic obstructive pulmonary disease 14(46.7%) samples are in regular 16(53.3%) samples are in irregular

About income of the **family monthly,** 12(40%) samples of them <5000, 9(30%) samples of them 5000-10000 and 9(30%) samples of them >10000.

In regarding to **smoking habits** 12(40%) of the samples belonged to yes and 18(60%) of the samples belonged to no.

Regarding **continuous breathing** difficulty presented at wake up 5(16.7%) of the samples belonged to and walking 4(13.3)of the samples of the sample belonged to, sleeping at night time 5(16.7%)samples of the belonged to, exercise 16(53.3)samples

EXPERIMENTAL GROUP

The above table shows that among 30samples,with regards to majority **age** samples belonged to above 60 years where as 4(13.3%) of the sample belonged to the age group above 20-40years.

Regarding **gender** 14(13.3%) male and 16(20%)female .

Regarding **educational status** majority 7 (23.3%) of them had illerate, 4(13.3%) of them had primary school education, and 9(30%) of them had high school education and 6(20%) of uneducated

With regards to **homemaker** 7(.233%) of them are illrate, where as 4(13.3%) of the sample belongs to primary school.

In relation to **marital status,** majority 22(73.3%) of the samples belonged to married

Regarding the **family history** of chronic obstructed pulmonary disease yes 12(40%) of them were no and 18(60%)

About **duration if illness** <1year 10(33.3%) and 2-5 year 10(33.3%) ,6 year 10(33.3%) samples.

Regarding the **treatment** of chronic obstructive pulmonary disease 16(53.3%) samples are in regular 10(46.7%) samples are in irregular

About **income of the family** monthly, 10(33.3%) samples of them <5000, 10(33.3%) samples of them 5000-10000 and 10(33.3%) samples of them >10000.

In regarding to **smoking habits** 24(80%) of the samples belonged to yes and 6(20%) of the samples belonged to no.

Regarding **continuous breathing** difficulty presented at wake up6(20%)of the samples belonged to and walking 7(23.3)of the samples of the sample belonged to ,sleeping at night time 6(20%)samples of the belonged to, exercise 11(36.7)samples .

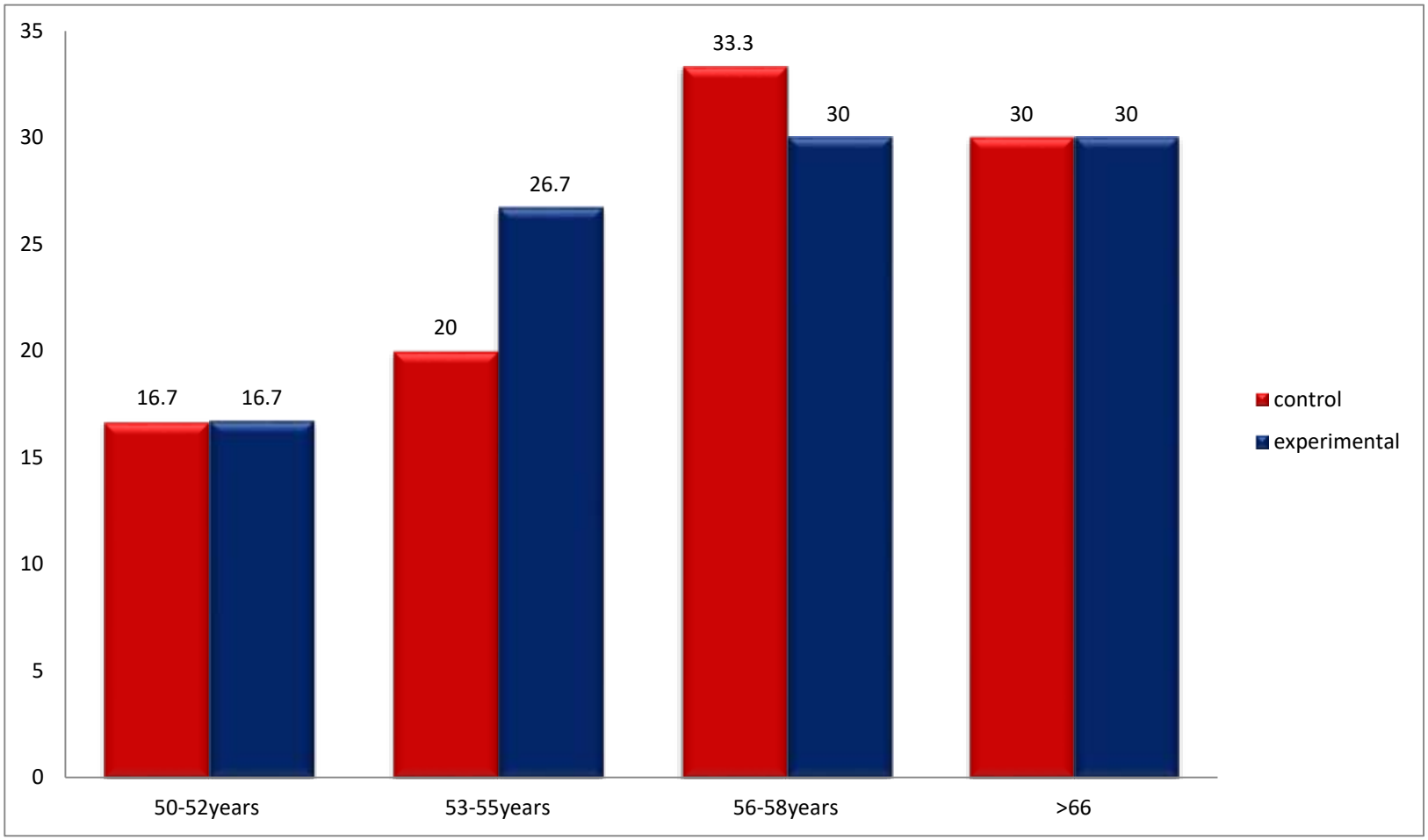


Figure 3: Distribution of subjects based on their age in experimental and control group.

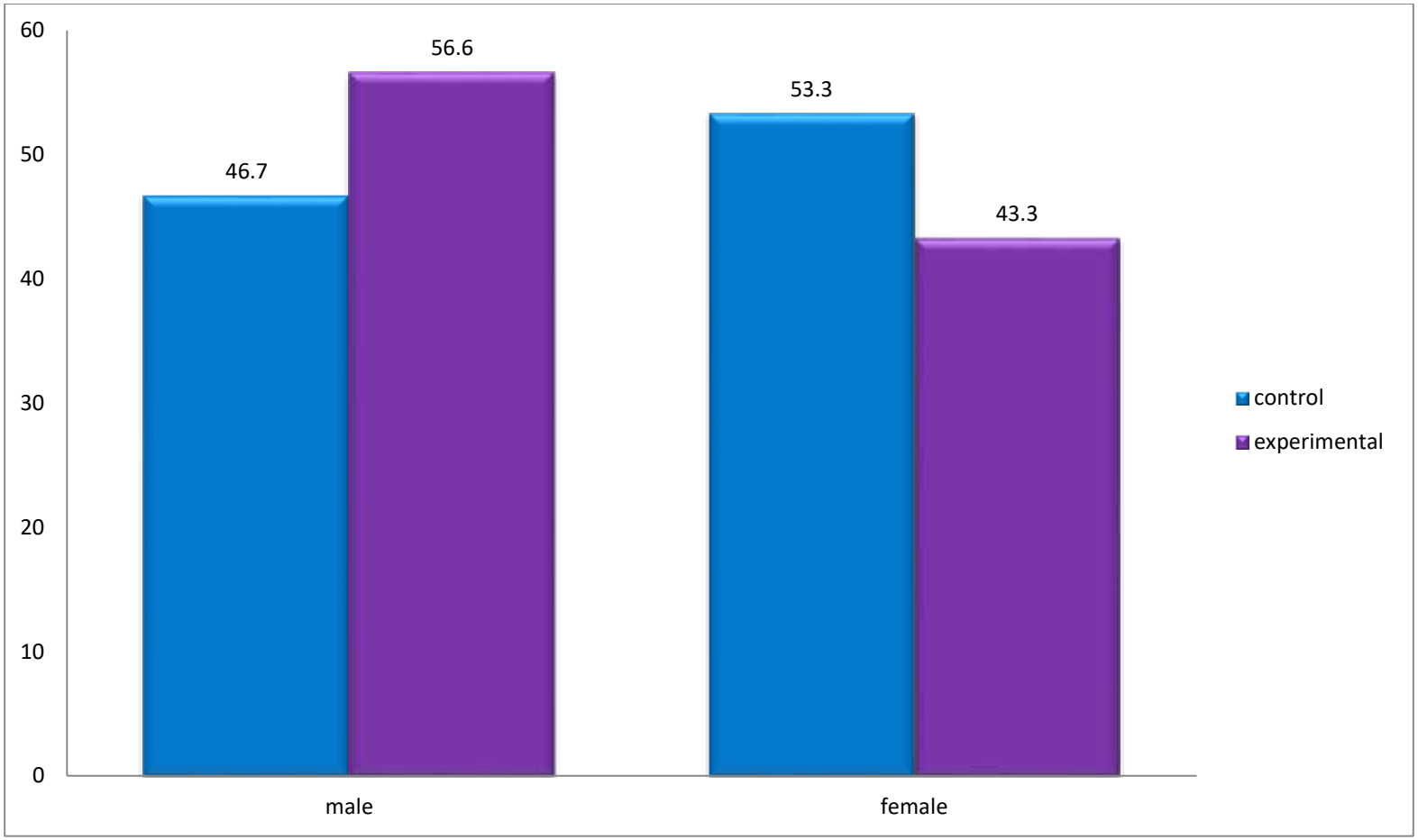


Figure 4: Distribution of subject based on their gender in experimental group and control group

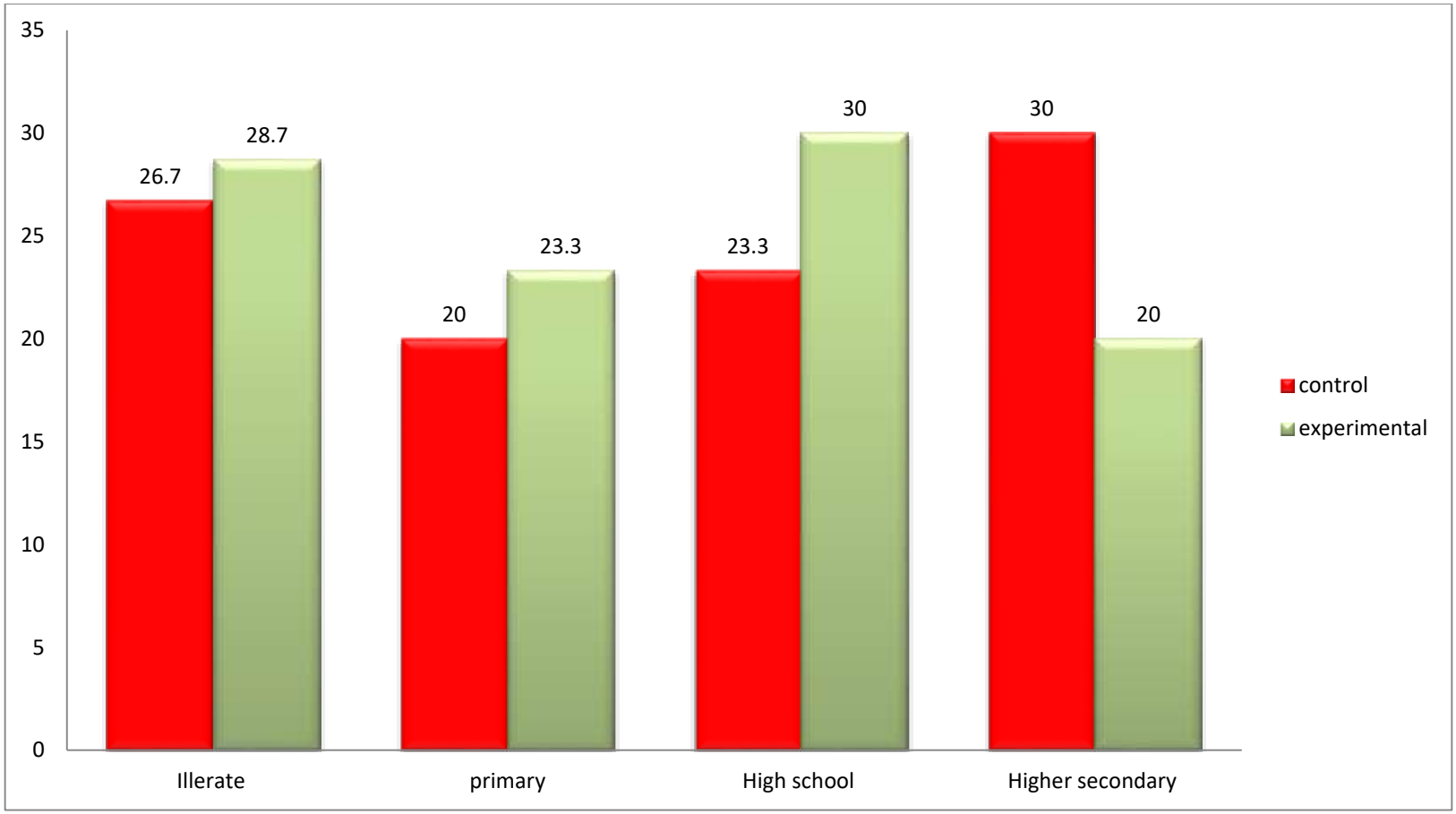


Figure 5: Distribution of subject based on their educational status in experimental and control group

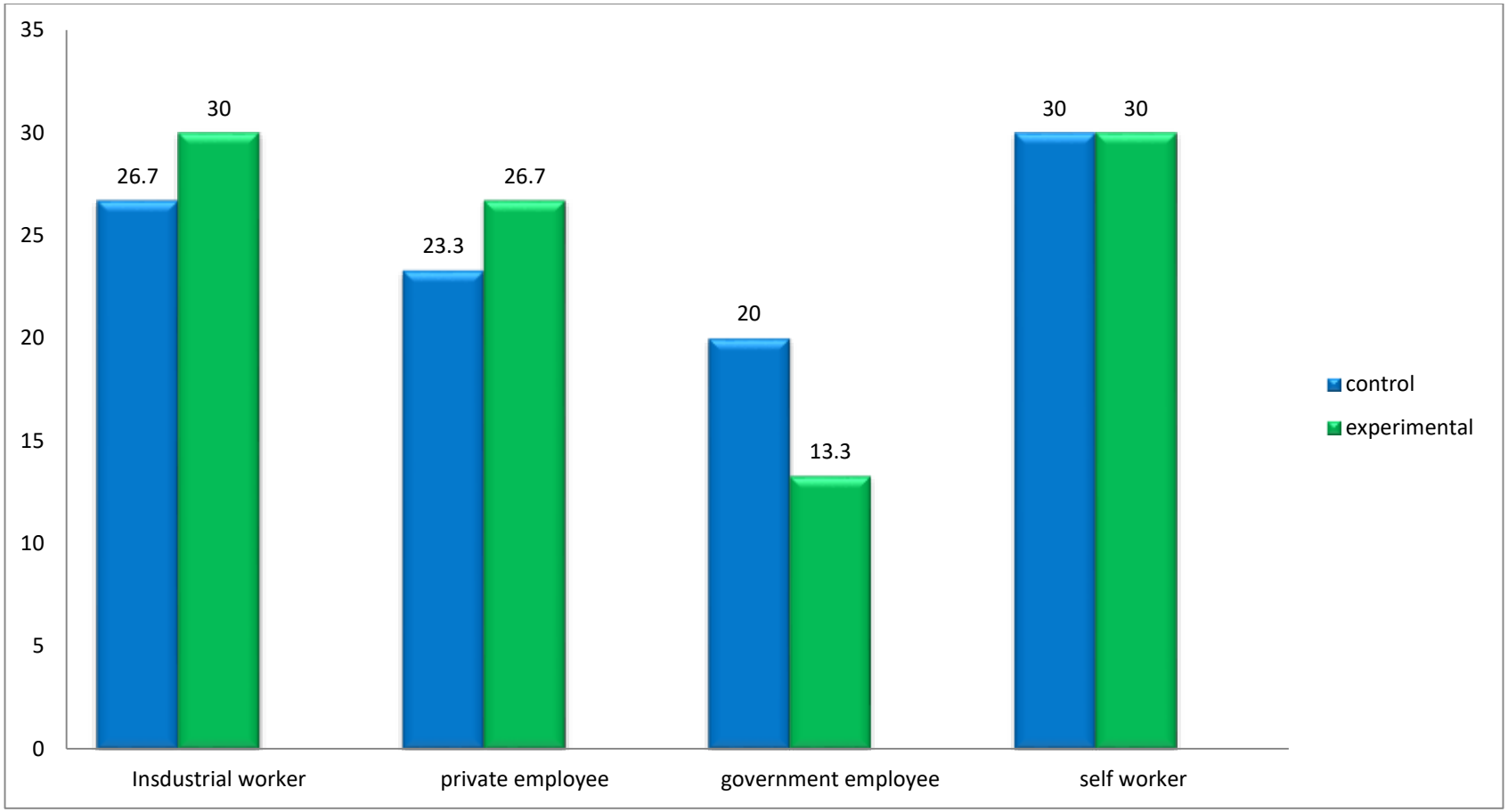


Figure 6: Distribution of subject on their occupation in experimental and control group

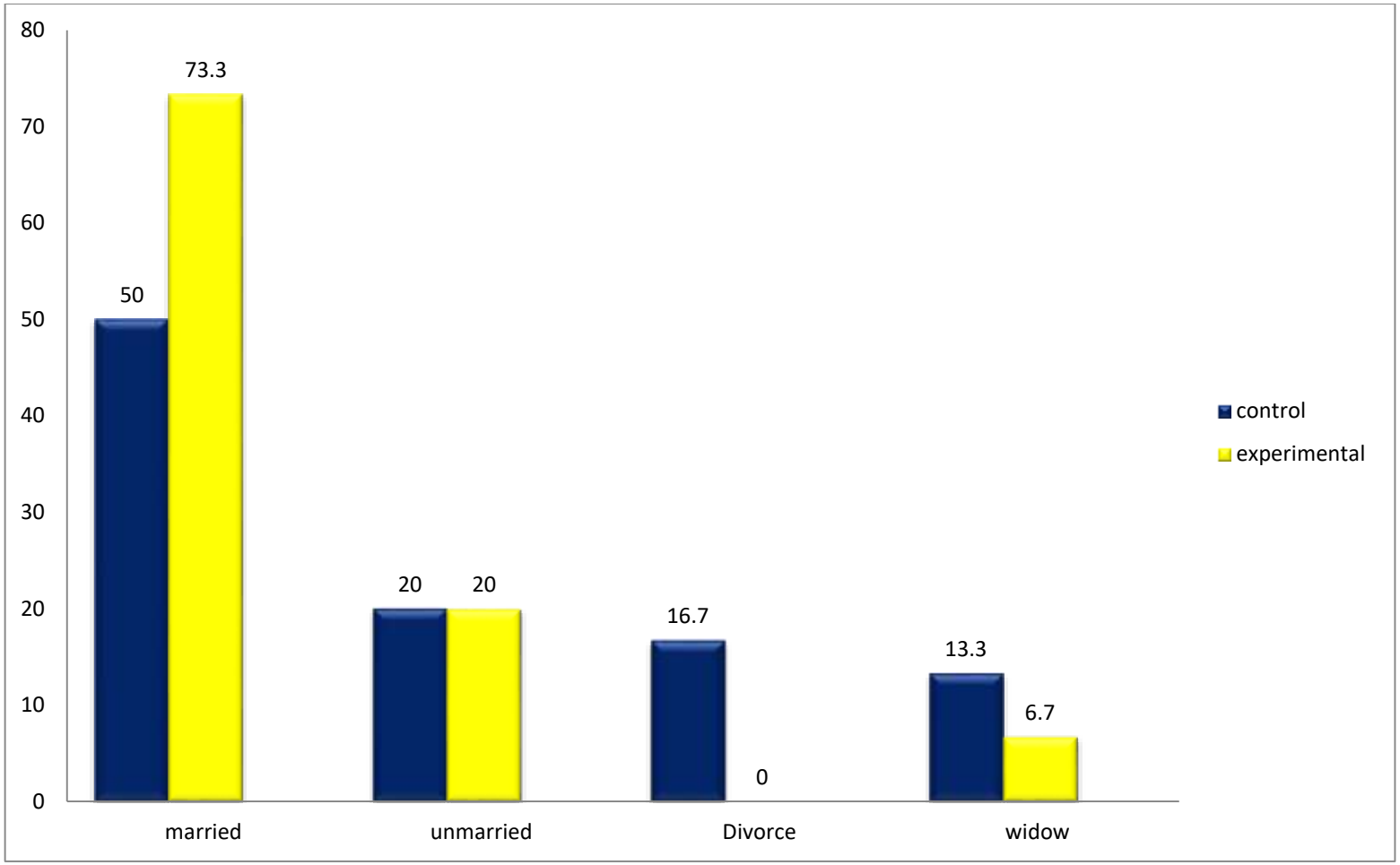


Figure 7: Distribution of subject on their marital status in experimental and control group

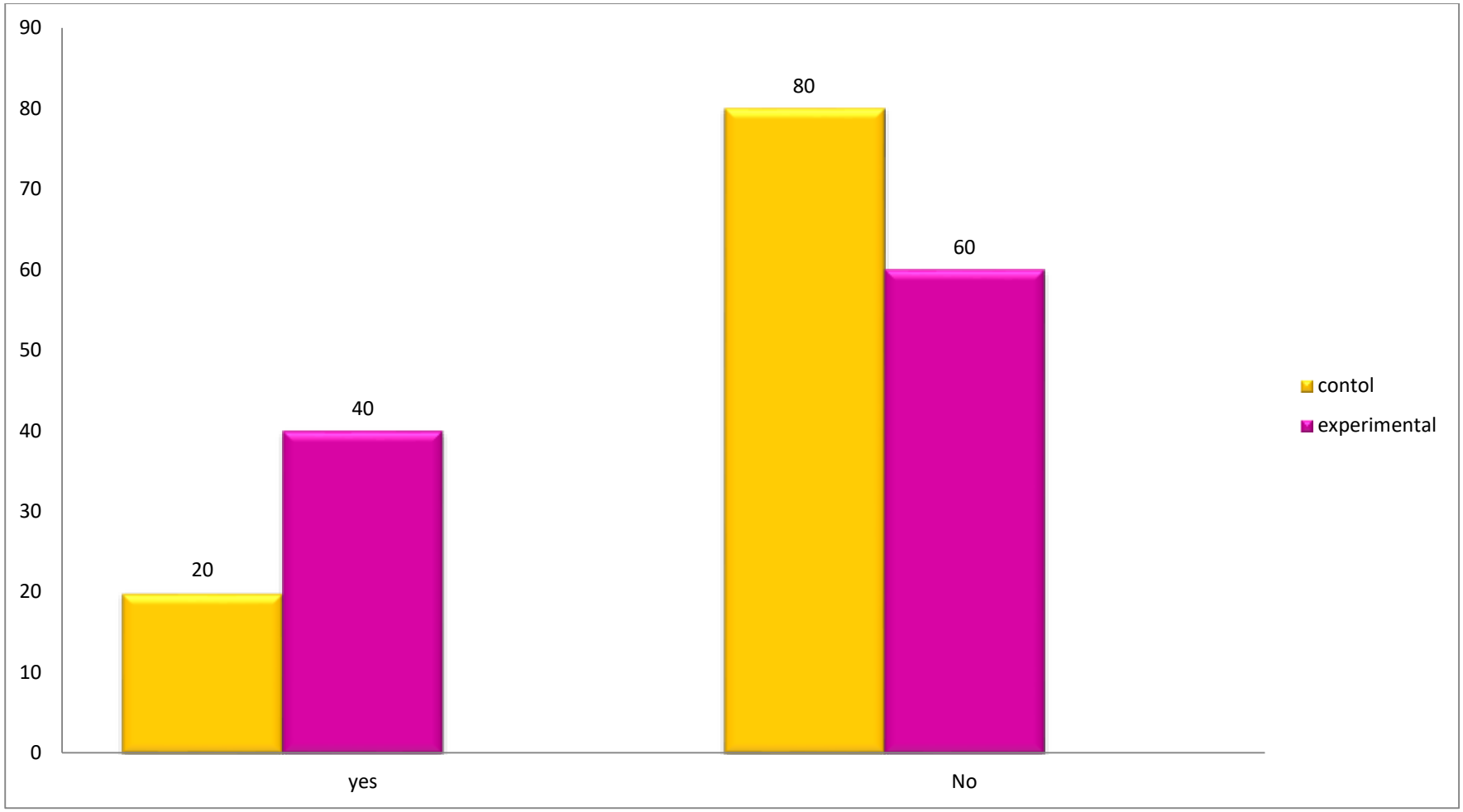


Figure 8: Distribution of subject on their family history of copd in experimental and control group

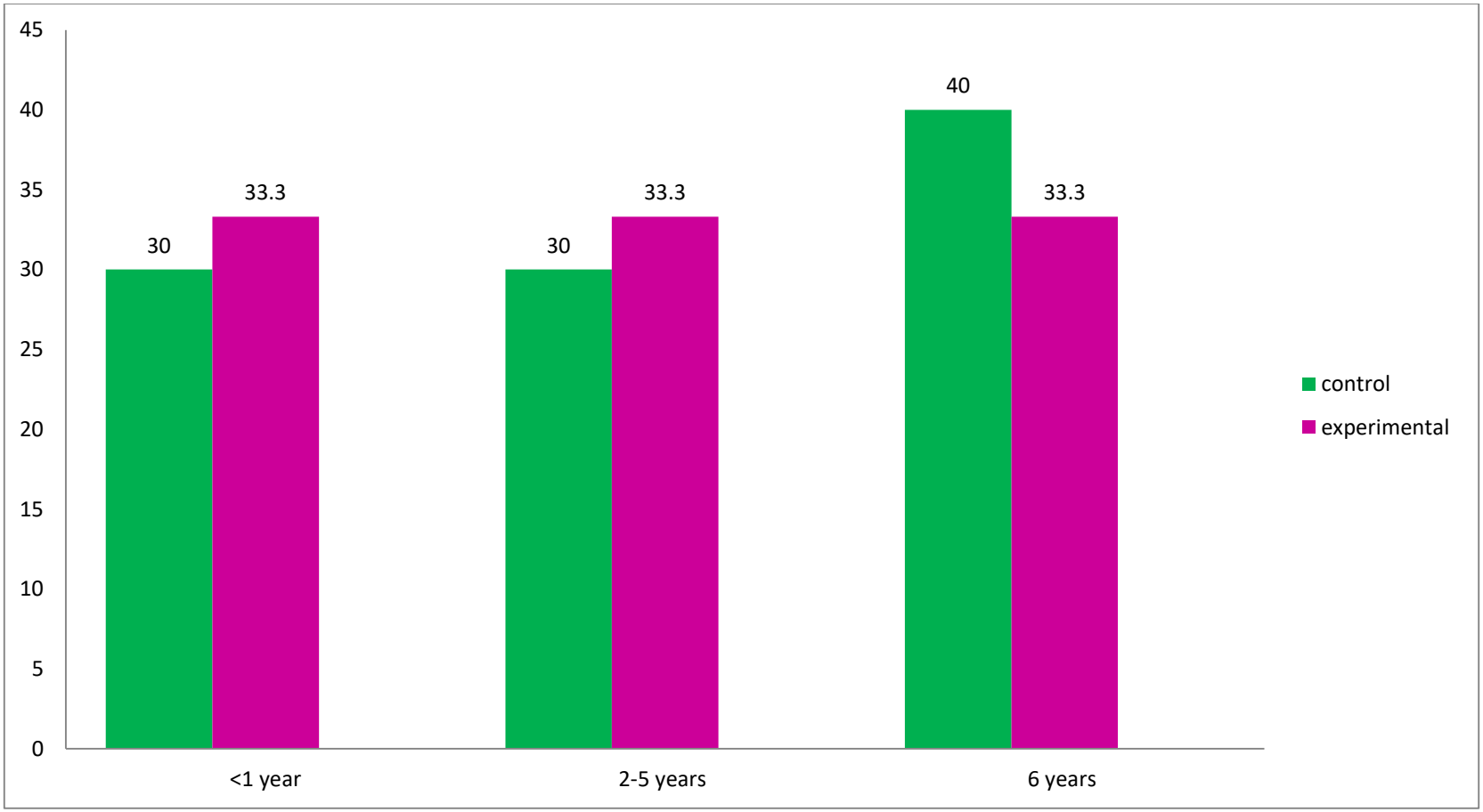


Figure 9: Distribution of subject based on duration of illness in control group and experimental group

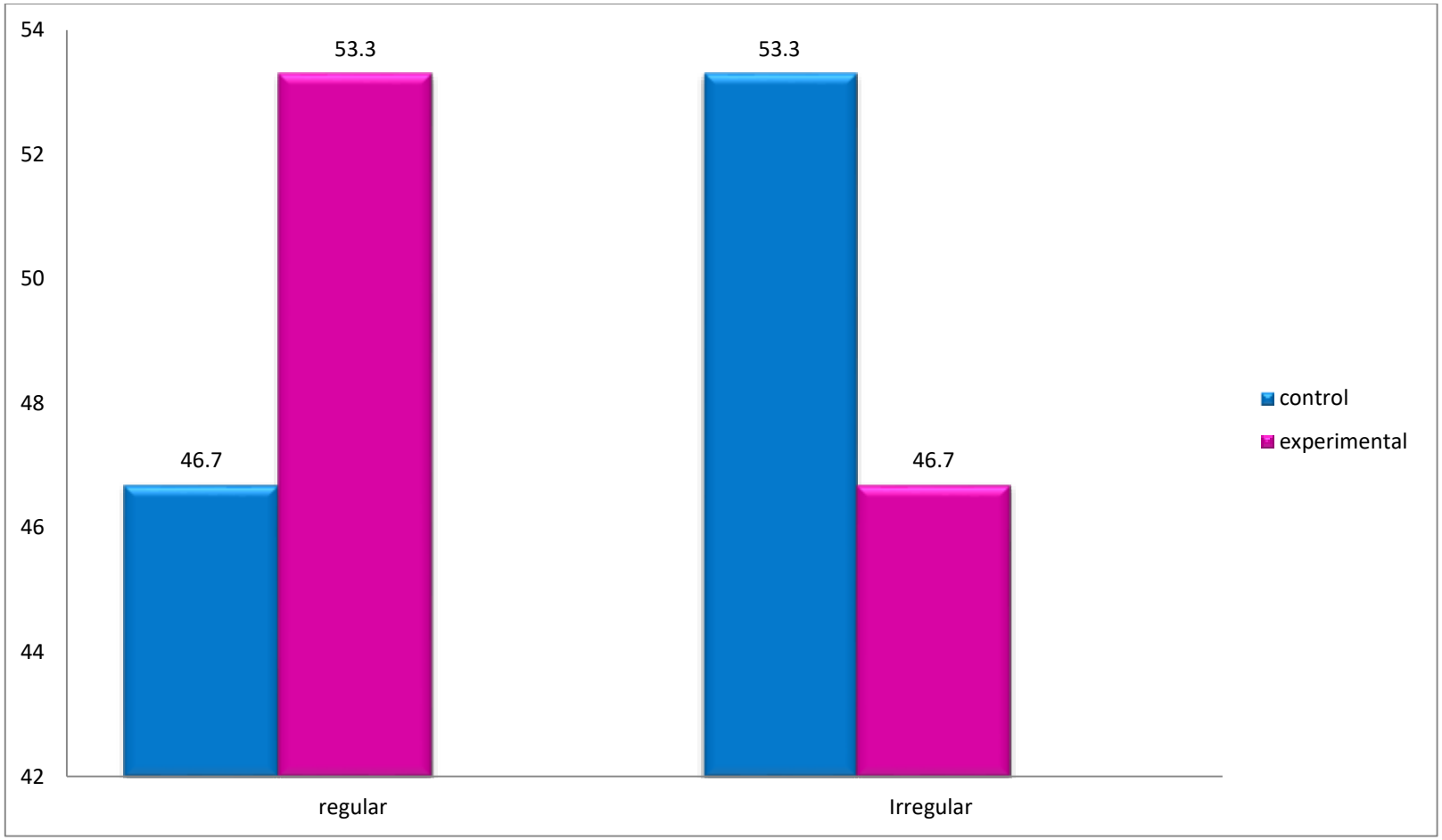


Figure 10: Distribution of subject based on their treatment of copd in control and experimental

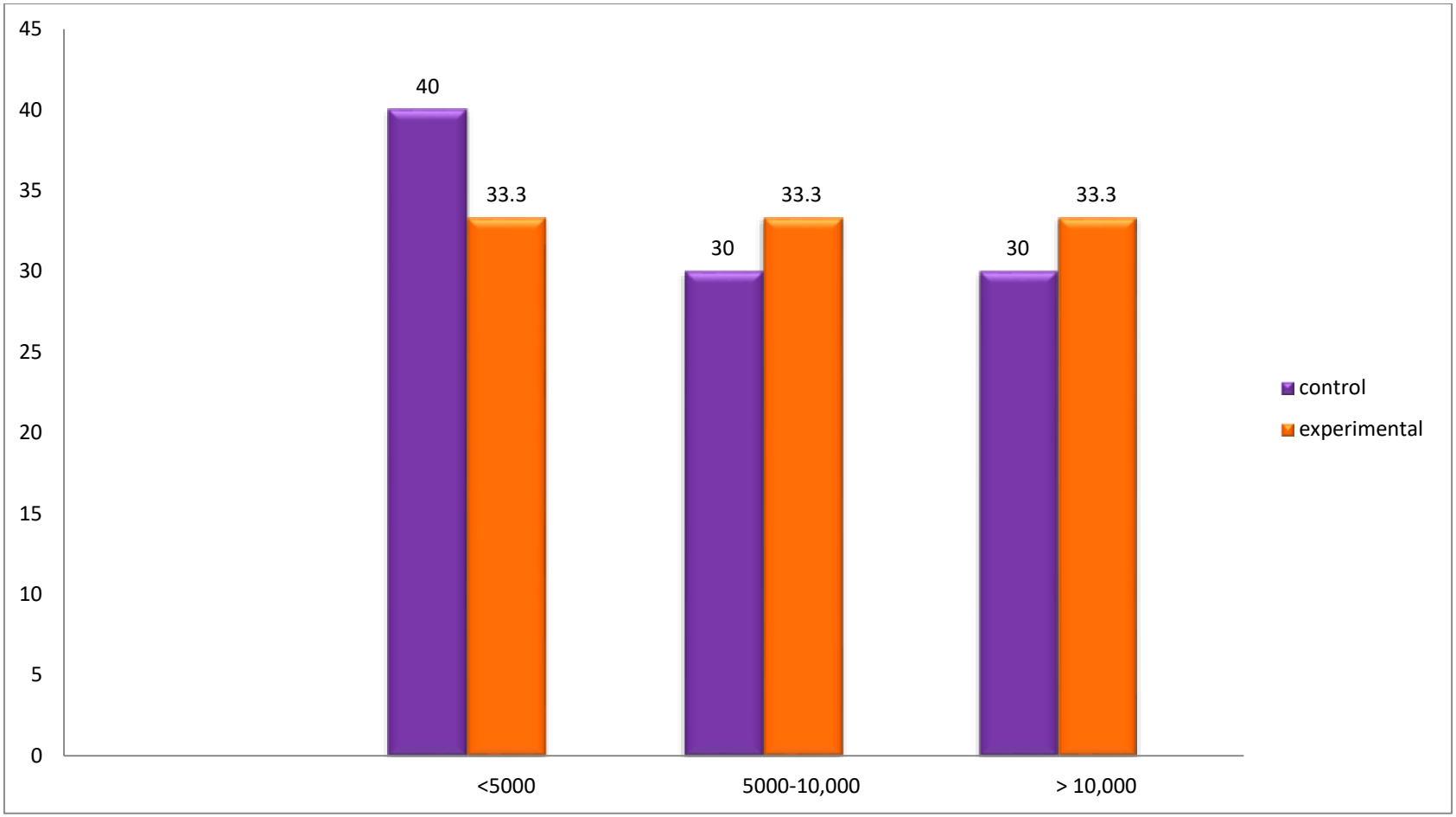


Figure 11: Distribution of subject based on their monthly income of the family in control and experimental group

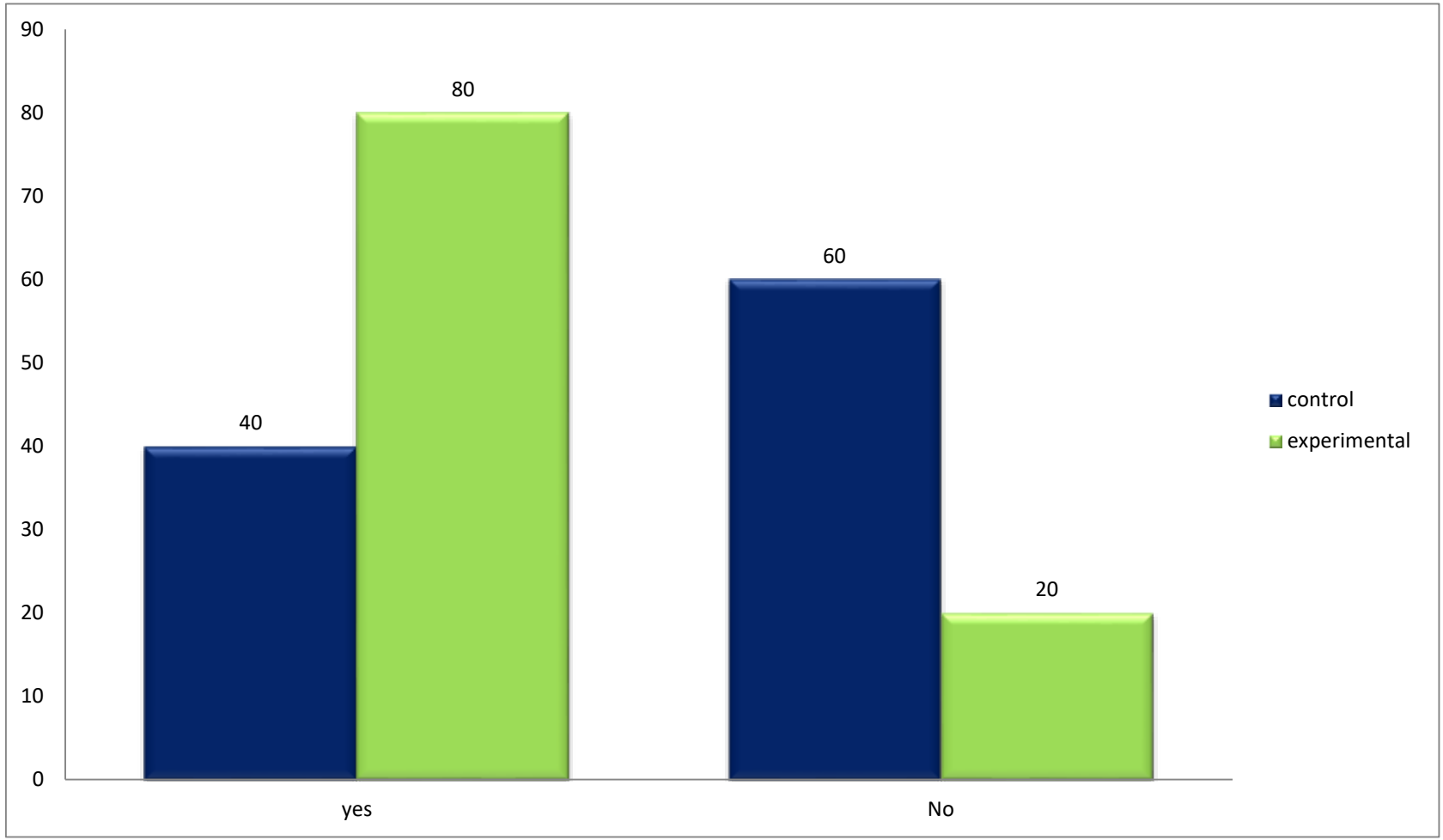


Figure 12: Distribution of subject based on their smoking habits in control and experimental group

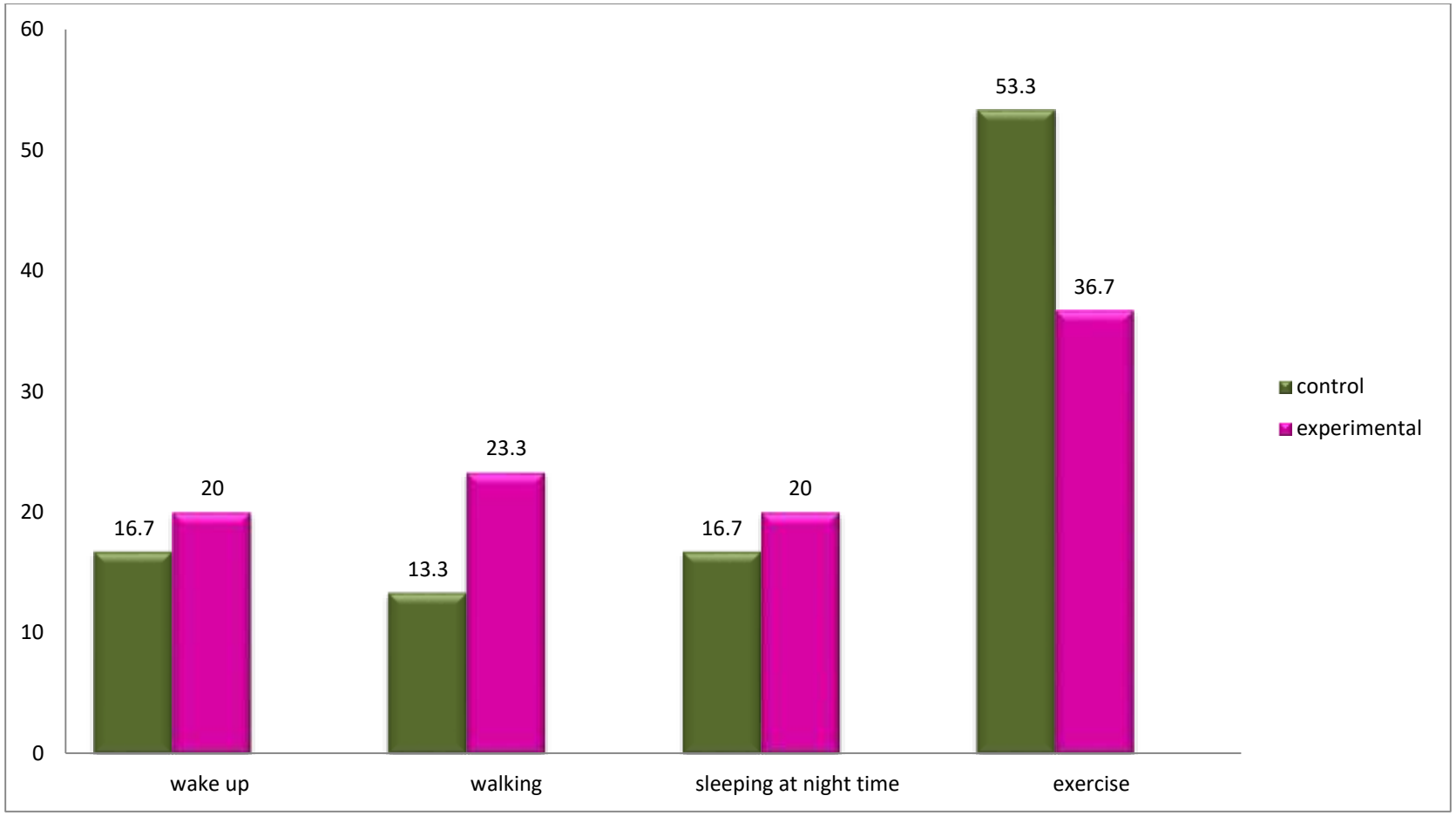


Figure 13. Distribution of subjects based on continuous breathing difficulty in experimental and control group

OBJECTIVE-II

Data on the deep breathing exercise among chronic obstructive pulmonary disease patients in experimental and control group.

Table 2: Frequency and percentage for deep breathing exercise among chronic obstructive pulmonary patients in control and experimental group

N=30+30

Level of Breathing pattern	Control group				Experimental group			
	Pre test		Post test		Pre test		Post test	
	f	%	f	%	f	%	f	%
No breathlessness	-	-	-	-	-	-	-	-
Very very slight	-	-	-	-	-	-	12	40
Slight breath	-	-	-	-	-	-	10	33.3
Moderate	-	-	6	20	2	6.7	2	6.7
Somewhat severe	-	-	-	-	3	10	6	20
Severe breath	-	-	-	-	-	-	-	-
Very severe	4	13.3	4	13.3	-	-	-	-
Very very severe	8	26.7	8	26.7	5	16.7	-	-
Maximum	6	20	12	40	9	30	-	-
Almost maximum	12	40	-	-	11	36.7	-	-
Total	30	100	30	100	30	100	30	100

The above table shows that in control group the per test scores on the level of breathing pattern very severe were 4(13.3%)had very very severe,8(26.7%) had maximum, 6(20%) had almost maximum12(40%). whereas in post test scores on the level of moderate breathing were 6(20%) had very severe breath,4(13.3%) had very very severe breath, 8(26.7%) had maximum 12(40%)respectively.

In experimental group the pre test scores on the level of breathing pattern moderate were 2(6.7%) had somewhat severe,3(10%) had moderate very very severe, 5(16.7%) had maximum breathing pattern 9(30%) had almost maximum 11(36.7). whereas in post test scores on the level of very very slight were 12(40%) had slight breath 10(33.3%) had moderate breathing pattern 6(20%)had severe breathing pattern and no one maximum breathing pattern respectively.

This finding reveals that in experimental group after the deep breathing exercise administration among chronic obstructive pulmonary disease were as decreased in post test than pretest.

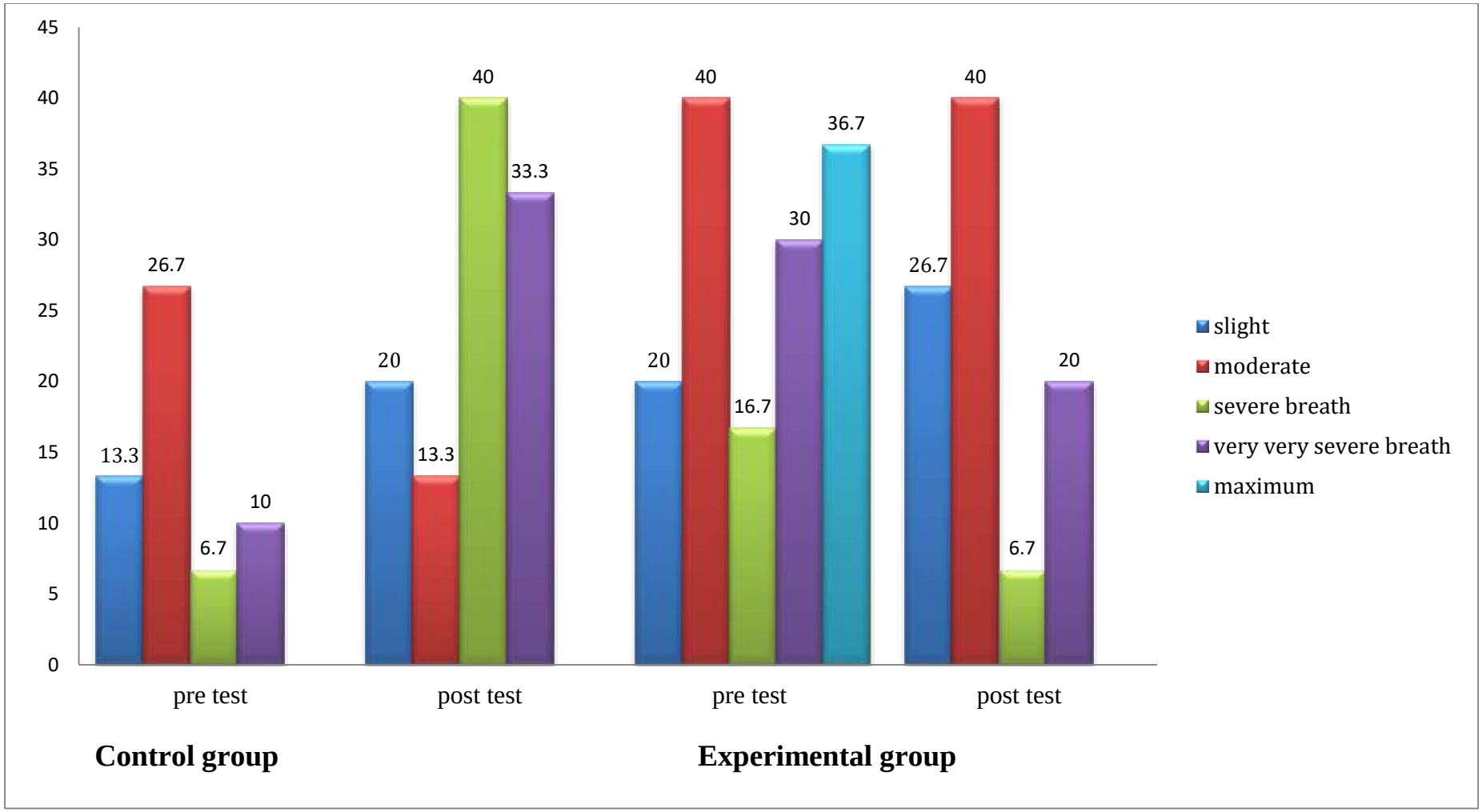


Figure: 14: Distribution of subjects based on the pretest and posttest dyspnea in control and experimental group.

OBJECTIVE –III

Data on effectiveness of deep breathing exercise among chronic obstructive pulmonary disease patients

Table 3: Mean, SD and paired 't" –test of pre and posttest level of breathing pattern in control group

N=30

Group	Pre test		Post test		Mean difference	't-value'
	Mean	SD	Mean	SD		
Control group	8.43	1.43	5.9	1.49	2.53	2.07

(*- P<0.05, significant and ** -P<0.01 & *** -P<0.001, Highly significant)

The above table shows that the calculated t value' in the control group was 2.07 which was not significantly at P<0.05 level. It can be concluded that there is no much difference in pre test and post test in control group.

Table 4: Mean, SD and paired "t" test of pre and post level of breathing pattern in experimental group.

N=30

Group	Pre test		Post test		Mean difference	't' value
	Mean	SD	Mean	SD		
Experimental group	8.36	1.83	2.43	1.60	5.93	2.64*

(*- P<0.05, significant and ** -P<0.01 & *** -P<0.001, Highly significant)

The above table shows that the calculated "t" value in the experimental group was 2.64 which was statistically significant at P<0.05 level. Hence H_1 is accepted. It can be concluded that deep breathing exercise was effective in reducing the dyspnea among chronic obstructive pulmonary disease patients.

Table 5: Mean, SD and unpaired 't' test of posttest dyspnea in control and experimental group.

(N=30+30)

Dyspnea among copd patients	Control post test		Experimental post test		Mean difference	't' value
	Mean	SD	Mean	SD		
	5.9	1.49	2.43	1.60	3.47	4.51*

(* -P<0.05, significant and ** -P<0.01 & *** -P<0.001, highly significant)

The above table shows that the obtained 't' value between control and experimental group is 4.51 which was significant at p<0.05 level. Hence H_1 is accepted. It can be concluded that the deep breathing exercise was effective in reducing the dyspnea in experimental group among chronic obstructive pulmonary disease patients than control group.

OBJECTIVE - IV

Table 6: Data on compare the pretest and posttest level of breathing difficulty between the control and experimental group.

N=30+30

	Group	Pre test		Post test		Mean difference	't' value
		Mean	SD	Mean	SD		
Breathing pattern	Experimental group	8.36	1.83	2.43	1.60	5.93	2.64*
	Control group	8.43	1.43	5.9	1.49	2.53	2.07

(*- P<0.05, significant and ** -P<0.01 & ***-P<0.001, Highly significant)

Experimental group

The above table shows that the calculated "t" value in the experimental group was 2.64 which was statistically significant at P<0.05 level .Hence H_2 is accepted. It can be concluded that deep breathing exercise was effective in reducing the dyspnea among chronic obstructive pulmonary disease patients

Control group

The above table shows that the calculated 't value' in the control group was 2.07which was not significantly at P<0.05 level. It can be concluded that there is no much difference in pretest and posttest in control group.

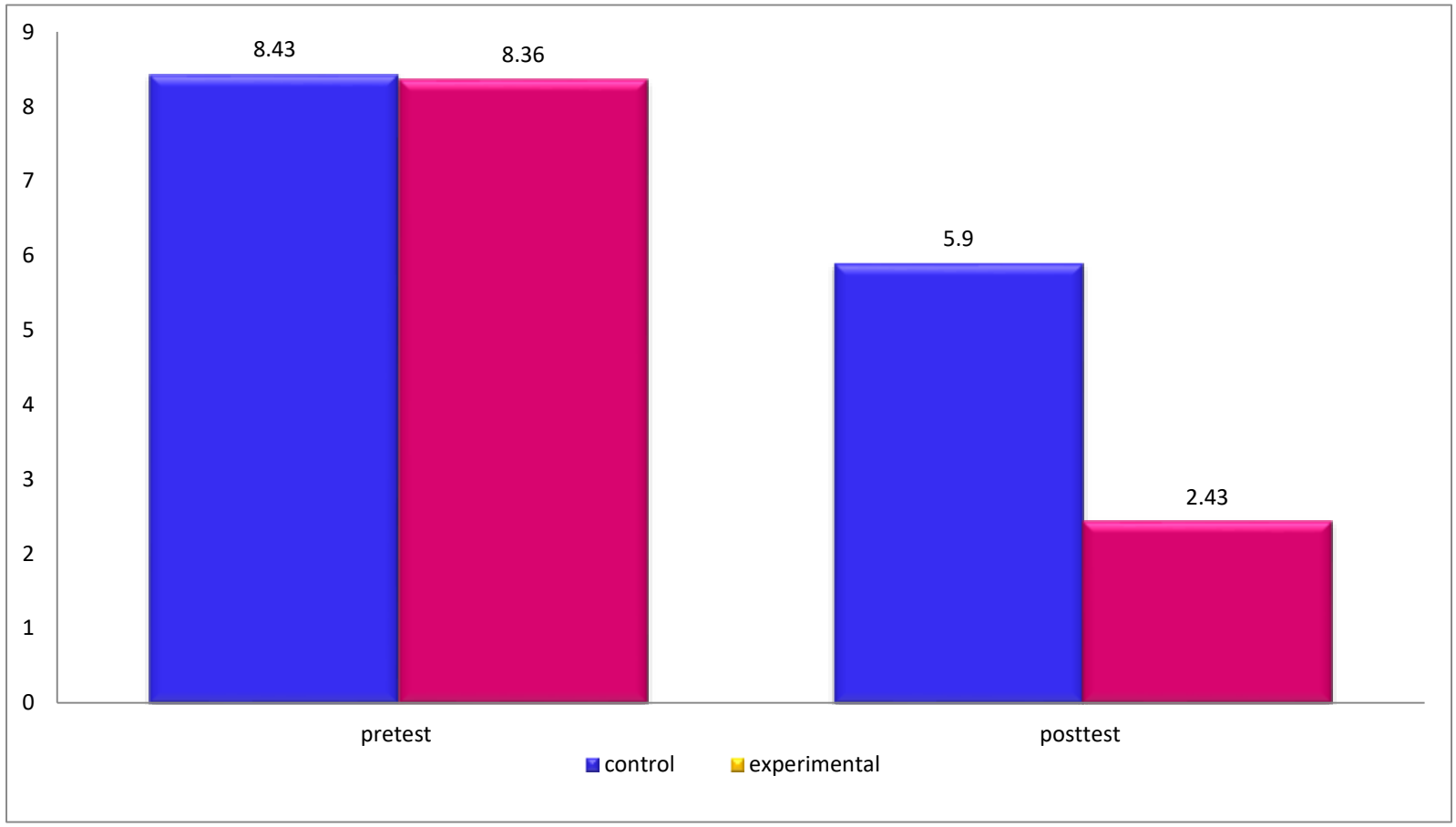


Figure 15: Comparison effectiveness of deep breathing exercise among chronic obstructive pulmonary disease patients experimental and control group.

OBJECTIVE – V

Data on association between the pretest breathing pattern in control group and their demographic variables.

Table 7: Frequency and percentage distribution of chi-square value on control group

N=30

S. no	Demographic variables	Moderate		Severe breath		Very very severe		Maximum		X^2	P-value
		f	%	f	%	f	%	f	%		
1	Age (in years):										
	a) 50-52 years	1	3.3	2	6.7	0	0	2	6.7		
	b)53-55 years	1	3.3	1	3.3	2	6.7	2	6.7	25.63	S
	c)56-58 years	1	3.3	5	16.7	4	13.3	0	0	df-9	16.92
	d) 59- 60years	1	3.3	0	0	0	0	8	26.6		
2	Gender										
	a)Male	2	6.7	5	16.7	4	13.3	3	10	4.46	NS
	b)Female	2	6.7	3	10	2	6.7	9	30	df-3	7.81
3	Educational status										
	a) Illiterate	2	6.7	2	6.7	1	3.3	3	10		
	b) Primary school	1	3.3	3	10	2	6.7	0	0	7.67	NS
	c) High school	1	3.3	2	6.7	2	6.7	2	6.7	df-9	16.49
	d) Higher secondary	0	0	1	3.3	1	3.3	7	23.3		
4	Occupation										
	a) Industrial worker	2	6.7	3	10	1	3.3	2	6.7	4.48	NS
	b) Private employee	1	3.3	2	6.7	3	10	1	3.3	df-9	16.49
	c) Government	1	3.3	1	3.3	1	3.3	3	10		
	d) Self worker	0	0	2	6.7	1	3.3	6	20		
5	Marital status										
	a) Married	2	6.7	4	13.3	2	6.7	5	16.7		
	b) Unmarried	1	3.3	1	3.3	3	10	4	13.3	7.20	NS
	c) Divorce	1	3.3	1	3.3	0	0	1	3.3	df-9	16.49
	d) Widow	0	0	1	3.3	1	3.3	2	6.7		

6	Family history of copd										
	a) Yes	2	6.7	3	10	1	3.3	0	0	26.08	7.81***
	b) No	2	6.7	5	16.7	5	16.7	12	40	df-3	
7	Duration of illness										
	a) <1year	1	3.3	2	6.7	2	6.7	4	13.3	3.846	NS
	b) 2-5 year	1	3.3	2	6.7	1	3.3	5	16.7	df-6	12.53
	c) 6year	2	6.7	4	13.3	3	10	3	10		
8	Treatment of copd										
	a) Regular	2	6.7	3	10	2	6.7	5	16.7	6.30	NS
	a) Irregular	2	6.7	5	16.7	4	13.3	7	23.3	df-3	7.81
9	Monthly income the family										
	a) Rs ,<5000	2	6.7	3	10	4	13.3	3	10	6.16	NS
	b) Rs, 5000-1000	1	3.3	2	6.7	1	3.3	5	16.7	df-6	12.16
	a) Rs,>10,000	1	3.3	3	10	1	3.3	4	13.3		
10	Smoking habits										
	a)Yes	2	6.7	3	10	3	10	4	13.3	3.89	NS
	b)No	2	6.7	5	16.7	3	10	8	26.7	df-3	7.81
11	Continuous breathing difficulty presented at										
	a)wake up	1	3.3	2	6.7	1	3.3	1	3.3	11.78	NS
	b)walking	1	3.3	1	3.3	2	6.7	0	0	df-9	16.92
	c)sleeping at night time	1	3.3	2	6.7	0	10	2	6.7		
	d)exercise	1	3.3	3	10	3	10	9	30		

(* -P>0.05,significant) (NS=Not significant)S=(significant)

The above table shows that there was a significant association between dyspnea among chronic obstructive pulmonary disease patients and their demographic variables such as age family history of COPD, There was no association between the demographical variables such as gender, educational status, marital status, occupation, duration of illness, treatment of COPD, family income, smoking habits, continuous breathing difficulty presented at

Data on association between the pretest level of breathing difficulty in experimental group and their demographic variables.

Table 8: Frequency and percentage distribution of chi-square value on experimental group.

N=30

S no	Demographic variables	Slight		Moderate		Severe breath		Very very severe		Maximum		X^2	P-value
		f	%	f	%	f	%	f	%	f	%		
1	Age (in years):												
	a) 50-52years	1	3.3	2	6.7	0	3.3	1	3.3	0	0	25.72	S
	b) 53-55 years	0	0	0	0	1	3.3	0	0	7	23.3	df-12	21.03
	c) 56-58years	1	3.3	1	3.3	2	6.7	3	10	2	6.7		
	d)59-60years	0	0	0	0	2	6.7	5	16.7	2	6.7		
2	Gender												
	a)Male	2	6.7	2	6.7	3	10	4	13.3	6	20	6.21	NS
	b)Female	0	0	1	3.3	2	6.7	6	20	5	16.7	df-4	9.49
3	Educational status												
	a) Illerate	1	3.3	1	3.3	2	6.7	1	3.3	3	10	12.45	NS
	b) Primary school	1	3.3	0	0	1	3.3	2	6.7	3	10	df-12	21.03
	c) High school	0	0	2	6.7	1	3.3	4	13.3	2	6.7		
	d) Higher school	0	0	0	0	1	3.3	2	6.7	3	10		
4	Occupation status												
	a) Industrial worker	1	3.3	1	3.3	2	6.7	4	13.3	1	3.3	14.51	NS
	b)Private employee	0	0	0	0	1	3.3	2	6.7	2	16.7	df-12	21.03
	c)Gover employe	0	0	1	3.3	1	3.3	0	0	2	6.7		
	d)Self worker	1	3.3	1	3.3	1	3.3	3	10	4	13.3		

5	Marital status												
	e) Married	2	6.7	2	6.7	3	10	8	26.7	7	23.3	15.16	NS
	f) Unmarried	0	0	1	3.3	1	3.3	0	0	4	13.3	df-12	21.03
	g) Divorce	0	0	0	0	0	0	0	0	0	0		
	h) Widow	0	0	0	0	1	3.3	1	3.3	0	0		
6	Family history of COPD												
	a) Yes	2	6.7	1	3.3	2	6.7	4	13.3	3	10	4.75	NS
	b) No	0	0	2	6.7	3	10	5	16.7	8	26.7	df-4	9.49
7	Duration of illness												
	a) <1 year	0	0	2	6.7	1	3.3	4	13.3	3	10	7.32	NS
	b) 2-5 years	1	3.3	0	0	2	6.7	2	6.7	5	16.7	df-8	15.51
	c) 6 years	1	3.3	1	3.3	2	6.7	3	10	3	10		
8	Treatment of COPD												
	a) Regular	1	3.3	2	6.7	3	10	4	13.3	7	23.3	2.3	NS
	b) Irregular	2	6.7	1	3.3	2	6.7	5	16.7	4	13.3	df-4	9.49
9	Monthly income the family												
	c) Rs ,<5000	2	6.7	1	3.3	2	6.7	3	10	2	6.7	9.23	NS
	a) Rs, 5000-1000	0	0	1	3.3	2	6.7	2	6.7	5	16.7	df-8	15.51
	b) Rs,>10,000	0	0	1	3.3	1	3.3	4	13.3	4	13.3		
10	Smoking habits												
	a) Yes	2	6.7	2	1.7	3	10	8	26.7	9	30	4.56	NS
	b) No	0	0	1	3.3	2	6.7	1	3.3	2	6.7	df-4	9.49
11	Continuous breathing difficulty presented at												
	a)wake up	1	3.3	0	0	1	3.3	2	6.7	2	6.7	21.03	S
	b)walking	0	0	1	3.3	2	6.7	1	3.3	3	10	df-12	21.33
	c)sleeping at night time	1	3.3	0	0	0	0	3	10	2	6.7		
	d)exercise	0	0	2	6.7	2	6.7	3	10	4	13.3		

(* -P>0.05, significant) (NS= Non significant)

The above table shows that there was a significant association between dyspnea among chronic obstructive pulmonary disease patients and their demographic variables such as age, continuous breathing difficulty presented at there is no association between the educational status, marital status, occupation, duration of illness, treatment of COPD, family income, smoking habits

CHAPTER- V

DISCUSSION

CHAPTER –V

DISCUSSION

This study was conducted to evaluate the effectiveness of deep breathing exercise among chronic obstructive pulmonary disease patients in selected hospitals at Dindigul District.

A convenience sampling technique was used to collect data from the study participants 60samples were taken, 30 samples in control group, and 30 samples in control group.pre test and post was conducted .The Data were collected for a period of six weeks at Shree oddanchatram government hospital and Dindigul headquarters hospitals in Dindigul District. The discussion was based on the objectives specified in this study

The first objective was to assess the breathing pattern before and after breathing exercise among chronic obstructive pulmonary disease patients in control group and experimental group

The findings shows that the pre test level of breathing pattern in control group, 4subjects (13.3%) had very severe level of breathing difficulty and 8 subjects (26.7%) had very very severe level of breathing difficulty had 6subjects (20%)maximum and 12 subjects (40%) almost maximum . And the post test level of breathing difficulty in control group, 6 subjects (20%) had moderate level of breathing difficulty and4subjects (13.3%) had very severe level of breathing pattern. And 8 subjects(26.7%) had very very severe level of breathing difficulty, and 12 subjects 40(%)had maximum level of breathing difficulty .

The findings shows that the pre test level of breathing pattern In experimental group were as ,2 subjects (6.7%)had moderate level of breathing difficulty and 3subjects(10%) some what severe level of breathing difficulty 5 subjects (16.7%)had very very severe level of breathing difficulty,9 subjects (30%) had maximum level of breathing difficulty ,11subjects (36.7%)had almost maximum level, of breathing difficulty..

The table 3 shows that the calculated "t"value 2.64 was significant at $p<0.05$level.The pre test mean in case of control group was 8.43 whereas the post test mean was 5.9 and its mean difference was 2.53 which had greater improvement than other parameters. It clearly concluded that there was a significant improvement in the level of breathing pattern among patients chronic obstructive pulmonary disease after giving breathing exercise in the experimental group. Hence research hypothesis H_3 is accepted.

The above findings are consistent with the findings of Einar Wilder Smith and Joo-Hui Tan(2013) conducted a study to assess the effectiveness of deep breathing exercise among chronic obstructive disease patients ..105 patients were selected and arranged randomly, nd assigned to control and experimental group. Convenience sampling technique was used. The intervention consists of 20 minutes of deep breathing exercise with 7consecutive days of morning, afternoon and evening . The results deep breathing exercise was effective in reducing dyspnea . It was an effective nursing intervention for reducing dyspnea.

The second objective was to evaluate the effectiveness of deep breathing exercise among chronic obstructive pulmonary disease patients in experimental group.

The calculated 't' value in the experimental group were 2.64 was statistically significant at $p<0.05$ level which clearly shows that there was a significant reduce the level of breathing pattern among chronic obstructive pulmonary disease patients after giving breathing exercise. The mean post test level of breathing pattern will be significantly lower than the mean pre test level of breathing pattern among patients in chronic obstructive pulmonary disease in the experimental group. Hence H_1 is accepted.

The obtained 't' value for level of breathing pattern between the control and experimental group is 4.51which were highly significant at $p<0.05$ level. These findings revealed that the subjects in experimental group had decreased level of breathing pattern after giving breathing exercise compared to control group. The mean post test level of breathing pattern in experimental group will be significantly lower than the mean post test level of breathing pattern in control group among patients chronic obstructive pulmonary disease . Hence research hypothesis H_2 is accepted

The above findings are consistent with the findings of Judith A.Paice.,et,al (2013),conducted a study to assess the effectiveness of deep breathing exercise on reducing dyspnea among chronic obstructive pulmonary disease patients . 60 patients were randomly allocated as control and experimental group .Data was obtained by using deep breathing exercise and dyspnea scale. Intervention was given to the experimental group. Data analysis revealed that the comparison of dyspnea before and after giving deep breathing exercise .The calculated 't' value of the study was 4.51at p level 2.00 . They finally included that the values are highly significant it shows deep breathing exercise was effective one for reducing dyspnea in chronic obstructive pulmonary disease patients .

The third objective was to find out the association between breathing pattern with their selected demographic variables in control group and experimental group.

There was no association between the pre test level of breathing pattern and their demographic variable such as gender ,marital status ,occupation ,education ,duration of illness ,smoking habits . There was a significant association between the levels of breathing pattern and the other demographic variables among chronic obstructive pulmonary disease patients in the control group. Hence research hypothesis H_3 is accepted.

There was a significant association between the demographic variables such as age, continuous breathing difficulty presented and their level of breathing pattern No other demographic variables were shown any association with their level of breathing pattern among patients chronic obstructive pulmonary disease in the experimental group. Hence research hypothesis H_3 is partially accepted.

A study was conducted on COPD is a common diseases, the early diagnosis of which allows effective management and treatment. The prospective observational longitudinal study comprised 164 high risk smokers aged 40 and 76 years. Age, sex, weight, height and smoking habits were recorded and spirometry was performed. Patients were informed of their result and given brief advice on how to stop smoking. After 3 years, the patients underwent the same evaluation. The result of the study revealed that 22% of the smokers were diagnosed with COPD. Three year later, an additional 16.3 % were diagnosed as having COPD, and disease had worsened in 38% of those already diagnosed. Of the patients with FEV1 less than 90%, 44.8% develops COPD. And accelerated decrease in FEV1 was found in 18% of the patients. Mean

tobacco consumption in 1999 was 28.1 pack years in subject without COPD and 31.7 packs years in those with COPD, whereas in 2002, consumption was 30.6 packs in the patients with COPD and 31.9 packs year in those without . In the years, 22.8% had stopped smoking

Summary This chapter dealt about the major findings of this study which were discussed based on their objectives of the study and supportive findings were quota

CHAPTER- VI

SUMMARY AND RECOMMENDATIONS

CHAPTER –VI

SUMMARY AND RECOMMENDATIONS

This chapter gives brief account of the present study along with the conclusion drawn from the findings, recommendations, implication, conclusion, suggestions for further studies and nursing implications.

SUMMARY OF THE STUDY

The focus of the present study was to evaluate the effectiveness of deep breathing exercise among chronic obstructive pulmonary disease patients at selected hospitals in Dindigul district.

OBJECTIVES OF THE STUDY

- To assess the breathing pattern before and after breathing exercise among chronic obstructive pulmonary disease patients in control and experimental group.
- To evaluate the effectiveness of deep breathing exercise among chronic obstructive pulmonary disease patients in experimental group.
- To find out the association between the breathing pattern with selected demographic variables in the control and experimental group

HYPOTHESIS

H1: The mean post test level of breathing pattern will be significantly higher than the mean pre test level of breathing pattern among chronic obstructive pulmonary disease of experimental group

H_2: There is a significant difference between the mean pretest and mean posttest level of breathing difficulty in experimental and control group.

H_3: There will be a significant association between breathing pattern with selected of demographic variables

The design of the study was quasi experimental, non-randomized control group pretest –posttest design. The conceptual frame work was based on health promotion model 1997.

The fourth international conference on health promotion ; new players for a new era-leading health promotion into the 21st century ,meeting in Jakarta from 21to 25july 1997. It has provided an opportunity to reflect on what has been learned about effective health promotion, to re examine the determinants of health ,and to identify the direction and strategies that must be adopted to address the challenges of promoting health in the 21st century the participants in the Jakarta conference hereby present this declaration on action for promotion in to the next century .

The sample size of the study was 60 clients who have chronic obstructive pulmonary disease in selected hospitals at Dindigul district. The experimental and control group consisted of 30 subjects in each. Convenience sampling technique was adopted for the selection of sample. Demographic data of the subjects were collected.

The investigator collected pre test data using modified dyspnea scale and for both group. Experimental group received intervention of deep breathing exercise for 15minutes twice a day with daily routine exercise for copd patients before giving oxygen therapy. Control group received routine exercise without intervention. Post test was conducted by the investigator for both groups. For experimental group, post

test was conducted 1 hour after administration of deep breathing exercise . The data were analyzed using both descriptive and inferential statistics.

MAJOR FINDINGS OF THE STUDY

With regard to age, 9(30%) in experimental group and 10(33.3%) in control group belongs to the age group of 51 to 60 years and 9(30%) in experimental group and 9(30%) in control group belonged to the age group of above 60 years.

Considering the sex, 17 (56.6%) subjects in the experimental group and 14 (46.6%) in the control group were females and the remaining were males.

In relation to education, 9(30%) of them had high secondary school and 7(23.3%) of them had iliterate in experimental group and 7(23.3%) of them had high school education and 9(30%) of them had higher secondary education in control group.

With regard to the occupation, 9(30%) were self-workers and 9(30%) were industrial workers in experimental group and 9(30%) were self-workers and 8(26.7%) were industrial workers in the control group.

In relation to marital status 22(73.3%) were married and 6(20%)unmarried in experimental group and 15(50%)were married and 6(20%) un married in control group

Regarding the history of previous copd, 18(60%) in experimental group and 24(80%) in control group had no history of previous copd.

Considering the duration of illness 10(33.3%) subjects having 6 years in and 10(33.3%) subject having 2-5years in experimental group and 12(40%) subject having 6 years and 9(30%)subject having in control..

With regard to the treatment of copd, 16(53.3%) subjects in the experimental group and 16(53.3%) of subjects in the control group.

Findings of the pretest level of breathing pattern in control group on 2 subjects (6.7%) had moderate level of breathing difficulty and 5 subjects (16.7%) had severe level of breathing difficulty. And the post test level of breathing difficulty in control group , 2 subjects (6.7%) had some what severe level of breathing difficulty and10subjects (33.3%) had slight level of breath difficulty .

Whereas in experimental group, the pre test level of breathing pattern 11 subjects (36.7%) had maximum level of breathing difficulty and 2 subjects(6.7%) had moderate level of breathing difficulty and the post test level of breathing difficulty ,12 subjects (40%) had very very slight level of breath difficulty ,and 10(33.3%) had slight breathing difficulty , level of breathing in the experimental group.

The calculated‘t’ values in the control group were 2.07which are not significant. It is concluded that there was no significant differences between the pre and post test level of breathing pattern among chronic obstructive pulmonary disease patients

The calculated ’t’ value in the experimental group were 2.64was statistically significant at $p<0.05$ level which clearly shows that there was a significant reduce in the level of breathing pattern among patients among chronic obstructive pulmonary disease after giving breathing exercise .Hence H_1 is accepted.

The obtained‘t’ values for level of pain between the control and experimental group is 4.51which were highly significant at $p<0.05$ level. These findings revealed that the subjects in experimental group had decreased level of breathing pattern after giving breathing exercise compared to control group. Hence research hypothesis H_2 is accepted.

There was no association between the pre test level of breathing pattern and their demographic variable such as gender ,marital status ,occupation ,education ,duration of illness ,smoking habits . There was a significant association between the levels of breathing pattern and the other demographic variables among chronic obstructive pulmonary disease patients in the control group. Hence research hypothesis H_3 is accepted.

There was a significant association between the demographic variables such as age, continuous breathing difficulty presented and their level of breathing pattern No other demographic variables were shown any association with their level of breathing pattern among patients chronic obstructive pulmonary disease in the experimental group. Hence research hypothesis H_3 is partially accepted.

CONCLUSION

The main conclusion of this present study was the deep breathing exercise is effectively reducing the dyspnea among chronic obstructive pulmonary disease clients. This study clearly stated that deep breathing exercise plays a vital role to reduce the dyspnea clients who have on chronic obstructive pulmonary disease.

IMPLICATIONS

The findings of the study have several implications in following field. It can be discussed in four areas namely nursing practice, Nursing administration, Nursing education and Nursing research.

Nursing practice

- Complimentary therapies can provide effective economical, non-invasive, non-pharmacological complements to medical care.
- Breathing exercise is one of touch therapy, which in this study has proved effective in reducing and improving the breathing pattern among patients chronic obstructive pulmonary disease.
- Nurses can adopt simple interventions like breathing exercise while providing care for the chronic obstructive pulmonary disease patients.
- Breathing exercise used in this study can be applied in the practice set up; there by increasing the nursing practice based on evidence.

Nursing administration

- Nurse administrators can arrange seminars and workshops to educate learners and staff nurses regarding breathing pattern among chronic obstructive pulmonary disease.
- The findings of this study will help nurse administrator to plan and organize various in service programmes like in-service education and workshop on breathing pattern and its effects on chronic obstructive pulmonary patients.
- It helps to provide critical thinking regarding pain management in orthopedic surgical unit.

- The nurse administrator can take part in developing protocols related to breathing pattern.

Nursing education

- Several implications can be drawn from the present study for nursing education
- The curriculum incorporating the recent trends and demands of the changing society needed for the progress of nursing education.
- Practical hours for complementary and alternative medicine including yoga, massage and reflexology can be included in the nursing curriculum which will help the students to improve their skills.

Nursing research

- This study motivates nursing personnel to do further studies related to this field.
- Research can be conducted to find out the effectiveness of various non-pharmacological methods in pain management of patients who have chronic obstructive pulmonary disease

LIMITATIONS

- Intervention was limited to 15 – 20 minutes
- Study was conducted only on patients who have undergone chronic obstructive pulmonary disease.
- Relatively small sample size
- Randomization of samples could not be done

RECOMMENDATIONS

- The study can be replicated on a larger samples to generalize the results
- The comparative study can be conducted with more than one intervention
- Training programmers for nurses can be given on complimentary therapies
- A study can be conducted to evaluate the knowledge and attitude of nurses regarding breathing exercise in reducing breathing pattern among patients chronic obstructive pulmonary disease

REFERENCES

BIBLIOGRAPHY

BOOK REFERENCE

1. **Bare, G,B, & Smeltzer c.s** ,(2001).textbook of medical surgical nursing volume 1, 9th edition Philadelphia: Lippincott ,446-465
2. **Basavanthappa B.T** (2007). Nursing research (3rd edition) new Delhi jaypee brothers ,180-189
3. **Bernadette, p.h &Denise pie** (1999). Nursing research, principles and methods (5th edition)Philadelphia :Lippincott ,184-198.
4. **Black m.j Hawks h.j.&keen A.M** (2001).medical surgical nursing volume 2, 6th edition Philadelphia :w.b Saunders, 1143-1150
5. **Barbara him** (1997) statistical methods for health care research (3 rd edition) Philadelphia Lippincott 62-78
6. **Collier, Lewis, &Heitkemper**,(2004)medical surgical nursing volume 1 6th Philadelphia :Mosby ,683-702
7. **Duncan .G & white, L** ,(1998) medical surgical nursing, an integrated approach 9th edition London :Delmar 330-339
8. **Erb, cozier ,barman ,&burke** (2000) .fundamentals of nursing (6th edition) California:Pearson education ,239-493
9. **Finkelmeier, B.A** (2000).cardiothoracic nursing 2nd edition Philadelphia :Lippincott 398 -493
10. **George B.J** (1990).Nursing theories , the base for professional nursing practice 4th edition Newberys :Appleton and longer ,215 -230
11. **Harkness & dincher** (1996)medical surgical nursing –total patient care (9th edition) Boston Mosby 568-577

12. **Jacqueline young**. (2001) breathing for health ,a complete self care manual, Missouri :torsions 2-10
13. **Kasper, d, braunwald, Hauser's long d & jamson**.j (2006). harrisons principles of internal medicine (16th ed) newyork McGraw hill,1182-1196

JOURNAL REFERENCES

1. Hall jc, tarala, tappier and hall j l, prevention of British medical journal 2001 UK London, 312(70):148-52
2. Chatham K, Baldwin J, Oliver W, Summer L and Friffiths H. Fix load incremental Respiratory muscle training: a pilot study and physiotherapy, 1996 New York USA; 82(7); 422-6
3. Prasanna kumari, the study to find out the effect of programmed breathing exercise. On pulmonary function in the and post-operative periods in patients undergoing mitral valvotomy, national medical journal8 (7)133-7
4. Stephen c. Changes in pulmonary function after naturally acquired respiratory infection in normal persons. American review of respiratory diseases USA newyork 1999; 20. 1057-93.
5. Craven JL, Evans GA, Davenport PJ, William RHP.The evaluation of incentive spirometry in the management of post-operative pulmonary complication.Br j surge 1974; 61:793-797
6. Pets TJ.Physiologic effect of IPPB, Blow bottles and incentive spirometry .Cure rev respire ther 1979; 110:567-583.
7. Pam grout "jump starts your metabolism: how to loose weight by changing the way you breathe. "Fireside 1998 30-34

8. Jerkins and Souter C, a survey into the use of incentives spirometry following CABG survey, physio theory pract 1990 London u.k; 6,117-126
9. Mackay MR. Ellis E, john stone c. Randomized clinical trial of physiotherapy after open abdominal surgery in the high risk patients. Aust J Physiotherapy 2005 Sydney Australia; 51(3), 151-9
10. Chatterjee S, chattopaadhay BP and saga D, pulmonary function of different categories of chronic obstructive pulmonary disease in railway workers of eastern India, sangyo-ina-daigaku-zasshi 1995 17(3) 173-189
11. Hoek G, brukenreef B, hotschreuder p and lumens. Effects of air pollution episodes on pulmonary functions and respiratory symptoms, toxicology and India's health, 1990, new Delhi India 6(5)189-97
12. Hoek G, brukenreef B, hotschreuder p and lumens. Effects of air pollution episodes on pulmonary functions and respiratory symptoms, toxicology and India's health, 1990, new Delhi India 6(5)189-97
13. Orfanos p, Ellis e, Johnston c, effect of deep breathing exercise and ambulation on pattern in ventilation in post operative patient ,aust j physiotherapy 1999 Sydney Australia 45(3);172-182
14. Jyothi T R a study to dig out the effect of programmed lung exercises on the symptom of patient with bronchial asthma attending asthma clinics, un published thesis, SNDT Women's university Bombay 1990 India Bombay 3-11
15. Southan D J diaphragmatic or abdominal breathing in asthmatic and physiotherapy; its value in physiotherapy 1995 New York USA; 73(8) 427

16. Gosse link r, schemer k, cops, delay p foresters t, incentive spirometry does not enhance recovery after thoracic surgery. Crit care med 2000. USA 28(3) 679
17. Wild P, Refregier m, Aubrtin A, Carten B and mountinn JJ, survey of the respiratory health of workers of a factor. Occupational and environmental medicine 1997, France124-142
18. Black and Jacob medical surgical nursing (5th edition) WB sounder's company Philadelphia
19. Levis, Collier and heithmper, medical surgical nursing: (4th edition) Missouri Mosby: 1996, 121-141
20. James E et al.Chronic respiratory disease-an emerging public health problem. National TB association, New York.2003.
21. Anaesth .J.Dyspnea underlying mechanism and treatment. The British journal of Anesthesia 2007Jan;106(4):463-474.
22. Taren Saxena, Manjra Saxena. Improving quality of life of patients with terminal respiratory disease.
23. Abramson M.Immuno therapy in asthma. An updated systematic review.Allergy.1999;54:1022-41.
24. Suzanne C Smelltzer,Brenda Bare. Text book of medical surgical nursing.10th ed. published by Lippincott Williams and Wikkims.2004;471-72.
25. Geddes E L et al.The effect of inspiratory muscle training on inspiratory muscle strength and endurance journal of respiratory medicine 2008;Dec;102(12):1715-29.

26. Collins EG et al .breathing pattern retaining and exercises training and exercise training in patients with chronic obstructive pulmonary diseases journal of respiratory medicine 2008 Aug;98(13):1234-40.
27. Sanchez RieraH et al. The effect of target –flow inspiratory muscle training on respiratory function Nlm catalog .2001 Sep;120(3):748-56.
28. Elisabeth Westerdahl,et al. The effects of deep breathing exercises on pulmonary function. Nlm catalog.2003 Dec;37(6):363-7
29. Zhang Z, et al. The effect of pulmonary rehabilitation with respiratory physiologyzhongguo wee zhong bing jiu yi xue.2008 oct;20(10):607-10
30. Rites T,et al .A review of the behavioral intervention in asthma breathing training.behav modif.2003 oct;27(5):710-30

NET REFERENCE

1. http://allnurses.com/general-nursing discussion/Adhd
2. http://www.medicine.com
3. http//en.wikipedia.org/wiki/adhd.
4. http://www.google.com
5. http://www.ncbi.nim nih.gov/pubmed/(accessed on 13-11-2011)
6. http://www.ncbi.nim.nih.gov/Pubmed/(accessed

APPENDICES

APPENDIX – I

Letter -1: Letter Seeking Permission to conduct the study

SAKTHI COLLEGE OF NURSING

(Approved by Govt. of Tamilnadu, Recognised by INC, TNC & Affiliated to Dr. M.G.R. Medical University)

Sakthi Nagar, Dindigul - Palani Main Road,
Palakkanuthu - (Po.),
Oddanchatram - 624 619.
Dindigul (Dt.), Tamilnadu.

Phone : 0451 - 2050272
Mobile : 97509 56810
Fax : 0451-2554317
E-mail : sakthinursingcollege@gmail.com

PERMISSION LETTER

From

The Principal,
Sakthi College of Nursing,
Oddanchatram, Dindigul (Dt)

To

Respected Sir / Madam,

Sub.: Request for permission to conduct pilot study – reg.

Ms. KARTHIKA .K is a bonafide M.Sc., Nursing student studying in our college. As a partial fulfillment of The Tamilnadu Dr. MGR Medical University requirement for the award of the M.Sc., Nursing Degree, she is undertaking (**"A STUDY TO ASSESS THE EFFECTIVENESS OF DEEP BREATHING EXERCISE AMONG PATIENT WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE IN SELECTED HOSPITAL AT DINDIGUL DISTRICT"**), she has identified your centre as the best place to conduct the study.

Further details of the proposed project will be furnished by the student personally. She will not hinder your routine in any way and she will abide to the rules and regulations of the institution. All the information collected from institution will be kept confidential.

I kindly request you to grant her permission to conduct the study at your esteemed institution.

Thanking you,

yours sincerely,

Date :

Place :

PRINCIPAL
Sakthi College of Nursing
Sakthi Nagar, Palakkanuthu
Dindigul - (Dist)
624 624

Letter -2: Letter Seeking Permission to conduct the study

SAKTHI COLLEGE OF NURSING

(Approved by Govt. of Tamilnadu, Recognised by INC, TNC & Affiliated to Dr. M.G.R. Medical University)

Sakthi Nagar, Dindigul - Palani Main Road,
Palakkanuthu - (Po.),
Oddanchatram - 624 619.
Dindigul (Dt.), Tamilnadu.

Phone : 0451 - 2050272
Mobile : 97509 56810
Fax : 0451-2554317
E-mail : sakthinursingcollege@gmail.com

2.3.17

PERMISSION LETTER

From

The Principal,
Sakthi College of Nursing,
Oddanchatram, Dindigul (Dt)

To

The Joint Director of Health Service
Dindigul District
Dindigul - 624001

Respected Sir / Madam,

Sub.: Request for permission to conduct research study – reg.

Ms. KARTHIKA .K is a bonafide M.Sc., Nursing student studying in our college. As a partial fulfillment of The Tamilnadu Dr. MGR Medical University requirement for the award of the M.Sc., Nursing Degree, she is undertaking (**"A STUDY TO ASSESS THE EFFECTIVENESS OF DEEP BREATHING EXERCISE AMONG PATIENT WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE IN SELECTED HOSPITAL AT DINDIGUL DISTRICT"**), she has identified your centre as the best place to conduct the study.

Further details of the proposed project will be furnished by the student personally. She will not hinder your routine in any way and she will abide to the rules and regulations of the institution. All the information collected from institution will be kept confidential.

I kindly request you to grant her permission to conduct the study at your esteemed institution.

Thanking you,

yours sincerely,

Date : 2/3/2017

Place : Dindigul

No me
Nursing Student
to conduct the
study

PRINCIPAL
Sakthi College of Nursing
Sakthi Nagar, Palakkanuthu
Dindigul - (Dist)
624 624

Letter -3: Letter Seeking Permission to conduct the study

SAKTHI COLLEGE OF NURSING
(Approved by Govt. of Tamilnadu, Recognised by INC, TNC & Affiliated to Dr. M.G.R. Medical University)

Sakthi Nagar, Dindigul - Palani Main Road,
Palakkanuthu - (Po.),
Oddanchatram - 624 619.
Dindigul (Dt.), Tamilnadu.

Phone : 0451 - 2050272
Mobile : 97509 56810
Fax : 0451-2554317
E-mail : sakthinursingcollege@gmail.com

7/3/17

PERMISSION LETTER

From

The Principal,
Sakthi College of Nursing,
Oddanchatram, Dindigul (Dt)

To

Respected Sir / Madam,

Sub.: Request for permission to conduct research study – reg.

Ms. KARTHIKA .K is a bonafide M.Sc., Nursing student studying in our college. As a partial fulfillment of The Tamilnadu Dr. MGR Medical University requirement for the award of the M.Sc., Nursing Degree, she is undertaking (**"A STUDY TO ASSESS THE EFFECTIVENESS OF DEEP BREATHING EXERCISE AMONG PATIENT WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE IN SELECTED HOSPITAL AT DINDIGUL DISTRICT"**), she has identified your centre as the best place to conduct the study.

Further details of the proposed project will be furnished by the student personally. She will not hinder your routine in any way and she will abide to the rules and regulations of the institution. All the information collected from institution will be kept confidential.

I kindly request you to grant her permission to conduct the study at your esteemed institution.

Thanking you,

yours sincerely,

Date :

Place :

Permitting to survey at GH ODC
7.3.17

Chief Civil Surgeon
Medical Officer
Govt. Taluk H.Q. Hospital
Oddanchatram - 624 619
Dindigul District.

PRINCIPAL
Sakthi College of Nursing
Sakthi Nagar, Palakkanuthu
Dindigul - (Dist)
624 624

APPENDIX-II

LETTER SEEKING EXPERT OPINION AND CONTENT VALIDITY

From

Miss .K Karthika

M.Sc (Nursing) II Year,

Sakthi college of Nursing,

Oddanchatram, Dindigul.

To

Respected Madam/Sir,

Sub: Requisition for expert opinion and content validity regarding.

I am a M.Sc.(Nursing) II year student of Sakthi College of Nursing, Oddanchatram ,Dindigul, under Dr. M.G.R. Medical university. As a partial fulfillment of my M.Sc. (Nursing) degree program, I am conducting a research study on "**A quasi experimental study to evaluate the effectiveness deep breathing exercise among chronic obstructive pulmonary disease who are aged between 50-60years at selected hospitals in Dindigul district**"

I am sending the tool for content validity and for your expert & valuable opinion. I will be very thankful if you return it at the earliest. Here with I have enclosed the necessary documents.

Thanking you,

Yours

sincerely,

Enclosure: K. Karthika

1. Statement of the problem & objectives of the study.
2. Tool for data collection.
3. Brief note on the research methodology and intervention tool.
4. Certificate of content validity.

APPENDIX-III

CERTIFICATE OF CONTENT VALIDITY

To Whom So Ever It May Concern

This is to certify that the tool prepared by **Ms.K.Karthika. MSc (N)** II Year student of Sakthi College of Nursing for the conduction of the research study on **"A quasi experimental study to assess the effectiveness of deep breathing exercise among chronic obstructive pulmonary disease at selected hospitals in Dindigul district"** is valid. She can proceed in conducting data collection.

Signature

Place:

Date:

APPENDIX – IV

LIST OF EXPERTS

1. **Dr.sivakumar.M.d,**
   General medicine Dindigul headquarter hospital
   Dindigul.

2. **Prof.Mrs v.Janahi Devi,M.Sc(N),**
   Principal
   Sakthi College of Nursing,
   Oddancharatam

3. **Asso.Prof shobana M.Sc(N), Ph. d,**
   Department of medical surgical nursing,
   Christian college of nursing
   Ambillikkai
   Oddanchatram

4. **Prof.Dr. Radha. M.Sc(N),Ph. D,**
   Department of medical surgical nursing,
   Aruna College of Nursing,
   Vellore.

5. **Asso.prof.KalpanaM.Sc(N)**
   Department of medical surgical nursing,
   Bishop's college of nursing,
   Dharapuram.

6. **Asst.prof.Jeya Margret Lilly M.Sc(N),**
   Department of medical surgical nursing,
   Christian college of nursing,
   Ambilikkai.
7. **Mr.Mani,**
   Statistician,
   Madurai.

CERTIFICATE OF CONTENT VALIDITY

TO WHOM SO EVER IT MAY CONCERN

This is to certify that the tool prepared by Miss. Karthika. K, M.Sc (N) II Year student of Sakthi College of Nursing for the conduction of the research study on **"A STUDY TO ASSESS THE EFFECTIVENESS OF DEEP BREATHING EXERCISE AMONG PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE WHO ARE AGED BETWEEN 30-60 YEARS IN SELECTED HOSPITAL AT DINDIGUL DISTRICT"** is valid. She can proceed in conducting data collection.

Signature of validator

Name of the validator : MARIA ANANDHI LOUISE.A

Designation : ASSOCIATE PROFESSOR

Date : 6.3.17

CERTIFICATE OF CONTENT VALIDITY

TO WHOM SO EVER IT MAY CONCERN

This is to certify that the tool prepared by Miss. Karthika. K, M.Sc (N) II Year student of Sakthi College of Nursing for the conduction of the research study on **"A STUDY TO ASSESS THE EFFECTIVENESS OF DEEP BREATHING EXERCISE AMONG PATIENTS WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE WHO ARE AGED BETWEEN 50-60 YEARS IN SELECTED HOSPITAL AT DINDIGUL DISTRICT"** is valid. She can proceed in conducting data collection.

Signature of validator

Name of the validator : A. SHOBANA

Designation : ASSOCIATE PROFESSOR

Date : 27/02/2017

APPENDIX – V

RESEARCH CONSENT FORM

Dear Participants,

I am Miss K. Karthika.T. M.Sc Nursing II year student of Sakthi College of Nursing, Oddanchatram. As a part of my study, a research on "A quasi experimental study to evaluate the effectiveness of deep breathing exercise among chronic obstructive pulmonaar disease who are aged between 50-60 years at selected hospitals in Dindigul district" is to be conducted. The study will be helpful in reducing breathing difficulty.

I hereby seek your consent and co- operation to participate in the study. Please be frank and honest in your responses. The information collection will be kept confidential and anonymity will be maintained.

Thanking you,

Signature of the researcher

I……here by consent to participate and undergo the study.

Place:

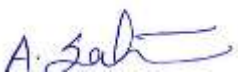
Date: Signature of the Participant

APPENDIX – VI

CERTIFICATE OF ENGLISH EDITING

TO WHOM SO EVER IT MAY CONCERN

This is to certify that the dissertation **"A quasi experimental study to assess the effectiveness of deep breathing exercise among chronic obstructive pulmonary disease at selected hospitals in Dindigul district"** by Ms.K.Karthika, M.Sc (N) –II year student of Sakthi College Of Nursing was edited for English language appropriateness by **Mrs.Sathya, M.A., M.Phil., M.B.A.,** English HOD of English Department working in Sakthi College of Arts and Science.



Signature

Place:

Date:

APPENDIX – VII

CERTIFICATE OF TAMIL EDITING

TO WHOM SO EVER IT MAY CONCERN

This is to certify that the dissertation **"A quasi experimental study to assess the effectiveness of deep breathing exercise among chronic obstructive pulmonary disease at selected hospitals in Dindigul district"** by **Ms.K.Karthika M.Sc** (N) –II year student of Sakthi College Of Nursing was edited for Tamil language appropriateness by **Mrs.Rathi devi, M.A., M.Phil., M.A., Ph.D., HOD of Tamil** department, working in Sakthi College of Arts and Science.

B. Rathi Devi

Signature

APPENDIX -VIII

SAKTHI COLLEGE OF NURSING

CERTIFICATE FOR ETHICAL CLEARANCE

Committee members	
Chairman 1. Mrs. V.Janahi Devi,m,sc (N) M.Sc (N) in Pediatric Nursing Principal, Sakthi College Of Nursing. **Members** 1. Dr. Vembanan .M.B.B.S, M.S., President, Sakthi Educational Institution. 2. Mrs. D.Thulasimani m,sc(n) M.Sc (N) in Medical Surgical Nursing, Associate Professor 3. Mr. V.Palanichamy, B.A.B.L., Advocate. 4. Mr.Diaz Prabhakaran, M.A., Sociology, 5. Ms. Mariyammal, Ph.D., Psychology	This is to certify that Ms. K. Karthika., M.Sc Nursing II year Student, Medical Surgical Nursing, Submitted a Protocol on study as Effectiveness deep breathing exercise among chronic obstructive disease patients The above protocol was received by ethical committee approved and mentioned that the study is feasible to carry out under the guidance of an eligible guide. **Signature of the Chairman**

APPENDIX – IX

DEMOGRAPHIC DATA

INTRODUCTION TO PARTICIPATE

Dear participations

This section of personal information and you are requested to answer the questions correctly the information collected from will be kept confidential

1) Age (in years)

a)50-52years

b)53-55years

c)56-58years

d)59-60years

2) Gender

a)male

b)female

3) Educational status

a) IIllerate

b)primary school

c) High school

d)High secondary school

4) Occupation

a)industrial worker

b) private employee

c) Government employee

d)Self employee

5)Marital status

a) Married

b) Un married

c) Divorce/separated

d) Widow

6) Family history of copd

a)yes

b) No

7) Duration of illness

a) < 1year

b) 2-5 year

c) 6years

8) Treatment of copd

a) Regular

b) Irregular

9) Monthly income of the family

a) < 5000

b) 5000-10,000

c) > 10,000

10) Smoking habits

a) Yes

b) No

11) Continuous breathing difficulty presented at

a) Wake up

b) Walking

c) Sleeping at night time

d) Exercise

இந்த பகுதியில் உங்களைப்பற்றிய சொந்த விபரங்கள் கொடுக்கப்பட்டுள்ளது இதற்கு தகுதியான விடையளிக்குமாறு கேட்டுக்கொள்கிறேன். இந்த விபரங்கள் ரகசியமாக வைத்துக்கொள்ளப்படும்

பங்கேற்பவர் எண் [ ]

1. வயது
   - அ) 50-52வயது [ ]
   - ஆ) 53-55வயது [ ]
   - இ) 56-58 வயது [ ]
   - ஈ) 59-60 வயது [ ]
2. பாலினம்
   - அ) ஆண் [ ]
   - ஆ) பெண் [ ]
3. கல்வித்தகுதி
   - அ) படிக்காதவர் [ ]
   - ஆ) ஆரம்பக்கல்வி [ ]
   - இ) உயர்நிலைக் கல்வி [ ]
   - ஈ) மேல்நிலைக் கல்வி [ ]
4. பணி நிலவரம்
   - அ) தொழில்துறை [ ]
   - ஆ) தனியார்துறை [ ]
   - இ) அரசுதுறை [ ]
   - ஈ) சுய தொழில் [ ]
5. திருமணம்
   - அ) திருமணம் ஆனவர் [ ]
   - ஆ) திருமணம் ஆகாதவர் [ ]
   - இ) திருமணமாகி பிரிந்தவர் [ ]
   - ஈ) கணவனை இழுந்தவர் [ ]

6. குடும்பத்தில் சுவாசம் தொடர்பான நோய் உள்ளதா?

அ) ஆம் [ ]

ஆ) இல்லை [ ]

7. குடும்பத்தில் சுவாசம் தொடர்பான நோய் எத்தனை வருடங்களாக உள்ளது?

அ) 1வருடம் [ ]

ஆ) 2 முதல் 5 வருடம் [ ]

இ) 6 வருடம் [ ]

8. சுவாச நோய்க்கான சிகிச்சை எப்படி மேற்கொள்கிறீர்கள்?

அ) தொடர்ச்சியாக [ ]

ஆ) அவ்வப்போது [ ]

9. குடும்ப வருமானம்

அ) ரூ.5,000குள் [ ]

ஆ) ரூ.5,000 முதல் ரூ.10,000 வரை [ ]

இ) ரூ.10,000க்குள் மேல் [ ]

10. புகைப்பிடிக்கும் பழக்கம் உள்ளதா?

அ) ஆம் [ ]

ஆ) இல்லை [ ]

11. தொடர்ச்சியாக சுவாச நோய் தொந்தரவு உள்ளதா, அல்லது எவ்வெப்போது தொந்தரவு உள்ளது?

அ) எழுந்திருக்கும் போது [ ]

ஆ) நடக்கும் போது [ ]

இ) இரவில் தூங்கும் போது [ ]

ஈ) உடற்பயிற்சி செய்யும் போது [ ]

Modified Borg dyspnea scale

0	No breathlessness
1	Very very slight
2	Very slight
3	Slight breathlessness
4	moderate
5	Some what severe
6	severe breathlessness
7	Very severe breathlessness
8	Very very severe breathlessness
9	Maximum
10	Almost maximum

Scoring inturputation

1-2-mild

3-4-moderate

5-6-severe breath

7-8- very very severe

9-10-Almost maximum

மூச்சு திணறல் அளவுமுறை (Borg)

மதிப்பெண்

0	சுவாச பிரச்சனை இல்லை
1	மிகவும் சிறிய அளவில்
2	சிறிய அளவில்
3	மிகவும் குறைவான அளவு சுவாச பிரச்சனை
4	மிதமான அளவில்
5	சிலசமயம் கடுமையான அளவில்
6	கடுமையான மூச்சுத் திணறல்
7	மிகவும் கடுமையான மூச்சுத் திணறல்
8	மிக மிக கடுமையான மூச்சுத் திணறல்
9	அதிகபட்ச அளவில் உள்ளுத
10	கிட்டதட்ட அதிகபட்சம்

மதிப்பெண்

1) 1-2 மிதமான அளவில்

2) 3-4 மிகவும் கடுமையான மூச்சுத் திணறல்

3) 5-6 மிக மிக கடுமையான மூச்சுத் திணறல்

4) 7-8 அதிகபட்ச அளவில் உள்ளது

5) 9-10 கிட்டதட்ட அதிகபட்சம்

APPENDIX – X

DEEP BREATHING EXERCISE

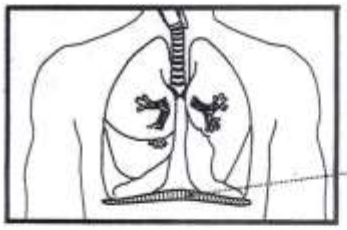
4. Your breath out should be twice as long as your breath in. Keep your lips pursed.

Exhale through pursed lips

5. Do not try to force the air out. Do not let your cheeks relax or 'balloon out'

Diaphragmatic Breathing (optional)

The diaphragm is made up of two large, dome-shaped muscles located just below the lungs. When they are tightened (contracted), there is more room in the chest cavity for your lungs to expand. The diaphragm also pull the lungs downward and helps draw air into the lungs.

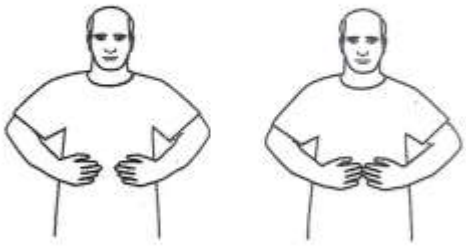


Practice

1. In a comfortable position, place one hand on your abdomen above your belly button. Breathe in slowly through your nose.

2. Feel your belly rise slowly as you breathe in. Let the air out through pursed lips (see above). The upper part of your chest should stay relaxed.

3. Once you are able to do this type of breathing both sitting and lying, try using it while standing and walking.

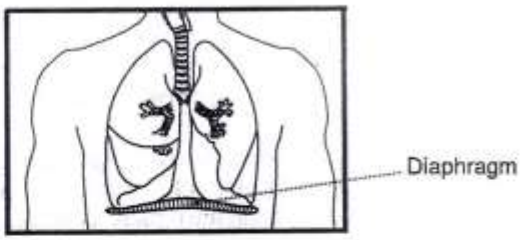


Breathing Exercises and Coughing

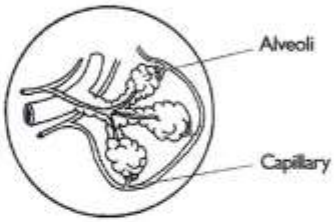
You and Your Lungs

The purpose of your lungs is to move oxygen from the air you breathe into your bloodstream so it can be used by your body.

Air enters your lungs through your mouth or nose and travels down your windpipe (trachea) into increasingly smaller airways. The structure of the airway tubes is similar to a tree trunk dividing into smaller and smaller branches. The smallest tube, which is about the thickness of a strand of hair, ends in bunches of tiny air sacs (alveoli). Each air sac is covered with very fine blood vessels (capillaries).



When you breathe in air, the air moves through the airways down to the air sacs. The oxygen passes from the air sacs into the blood stream and is carried to the rest of the body.



Pursed Lip Breathing

Pursed lip breathing is a technique that helps to control your breathing rate and improve your shortness of breath.

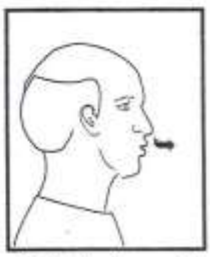
Practice

1. Breath in slowly through your nose.


Inhale through the nose

2. Pause.

3. As you breathe out, part your lips just enough to let a steady steam of air out.


Exhale through pursed lips

Coughing and Sputum Clearance

Cough and sputum are two other symptoms of your disease. Coughing is important because it helps remove sputum from your lungs. When sputum is removed you can breathe easier.

It is helpful to cough early in the day to remove the sputum that has built up during the night. It is als helpful to cough well, about a half an hour before lunch and supper; it may help make your meal mor enjoyable. Before going out, cough to clear any sputum. You will be less likely to cough while you are ot

There are also devices that may be suitable for you. These devices help in the movement of sputum. Consult a health care professional about the use of these.

Controlled Cough Technique

Practice

1. Sit comfortably with your feet resting firmly on the floor, and lean forward slightly.
2. Take three to four deep diaphragmatic breaths before coughing.
3. Take a deep breath, hold your breath for three seconds, tighten your abdominal muscles and cough twice. The first cough will loosen your sputum. The second cough will move the sputum high in your throat.
4. Spit it into a piece of tissue and check the color. If it is a yellow, green or red in colour, talk to your doctor. Throw the tissue away.
5. Take a break and repeat once or twice if you do not cough up any sputum.

Relaxation Positions to Reduce Shortness of Breath

When breathing is difficult, use one of these positions to help you relax and regain control of your breathing:

Practice

Lying
- Lie on your side, leaning on three or four pillows.
- Keep your head up and your shoulder supported.

Sitting (I)
- Sit at a table, lean forward and rest your arms on the table.
- Rest your head on a pillow.

APPENDIX – XI

PHOTO GALLERY